November
1937

NO OTHER TIRE CAN MATCH ITS PERFORMANCE!

Because THE GROUND GRIP TREAD IS PATENTED!

FARMERS everywhere know that the Firestone Ground Grip Tire out-performs all other tractor tires. They know its outstanding performance is due to the famous Firestone Ground Grip tread and no other tire can match its performance because this tread is PATENTED. They know also that no other tire can give them so many important money-saving advantages.

GREATER TRACTION — Takes a deeper and broader bite into the soil and has positive self-cleaning action.

GREATER STRENGTH to resist the strain of heavy pulling is provided because every fiber of every cord is saturated with liquid rubber by the patented Firestone Gum-Dipping process. Two extra layers of Gum-Dipped cords under the tread bind the tread and cord body so solidly together that we guarantee the tread will not separate from the cord body.

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GREATER DRAWBAR PULL enables this amazing tire to do more work in a given time.

Only *genuine* Firestone Ground Grip Tires can give you such performance! See this amazing tire today at your nearest Firestone Implement Dealer, Tire Dealer or Firestone Auto Supply & Service Store.

For greatest economy and performance SPECIFY Firestone Ground Grip Tires on all new tractors and wheeled farm implements.

Listen to the Voice of Firestone featuring Richard Crooks and Margaret Speaks, Monday evenings over Nationwide N. B. C. Red Network

MORE FARM TRACTORS ARE EQUIPPED WITH FIRESTONE GROUND GRIP TIRES THAN ALL OTHER MAKES OF TIRES COMBINED

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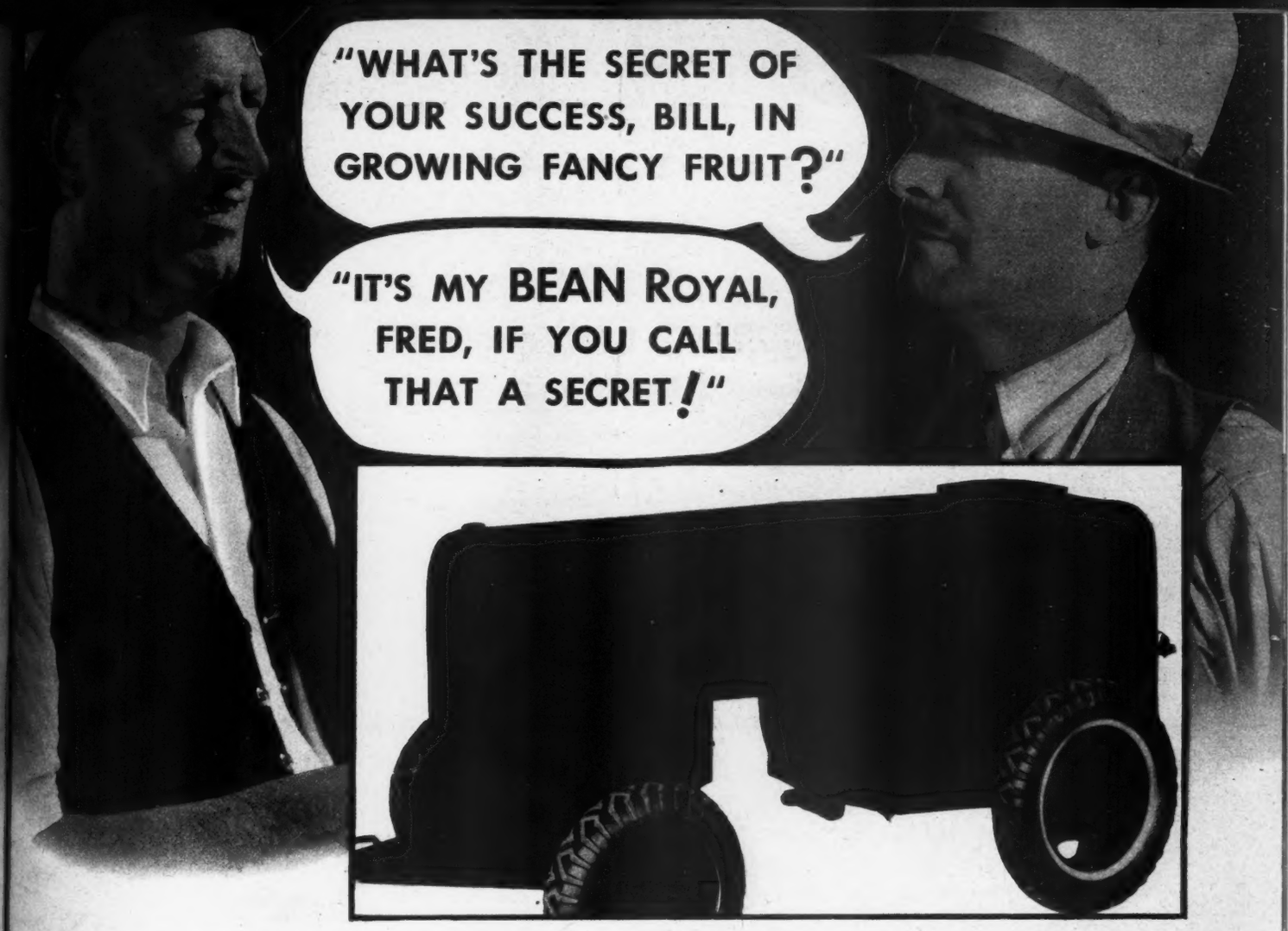


STOP WORMS AND OTHER PESTS *QUICK* ...WITH THE MODERN BEAN "ROYAL"

WITH THE BEAN ROYAL you have the spray on your trees before the pests can do damage. And you have a surging all-enveloping spray cloud that saturates every part of every tree.

You get these results because the BEAN is built to meet today's exacting demands for high pressure, ample capacity, and absolute dependability in the field.

Stream-lined for easy handling under the trees; all-metal including all-steel tank (proofed against corrosion); friction-less ball and roller-bearings throughout; automatic lubrication; indestructible porcelain-lined cylinders; eccentric drive of plungers to take care of today's high pressure loads; the BEAN All-Enclosed Royal Pump, with all working parts running in oil; and many other features.

Sizes to meet the needs of every grower. Built with Timken Tapered roller-bearing wheels for pneumatic tires, dust-proof steel wheels, or without wheels for truck mounting.

BEAN ALSO BUILDS A COMPLETE LINE OF DUSTERS, CLEANERS AND WASHERS

BEAN FULL-ARMORED ROYAL SPRAYERS

See your nearest BEAN *dealer for full information. Also, sign and send coupon for new complete* BEAN *catalog*

JOHN BEAN MFG. CO. Division of Food Machinery Corporation
15 Hosmer St., Lansing, Michigan · 104 West Julian St., San Jose, California

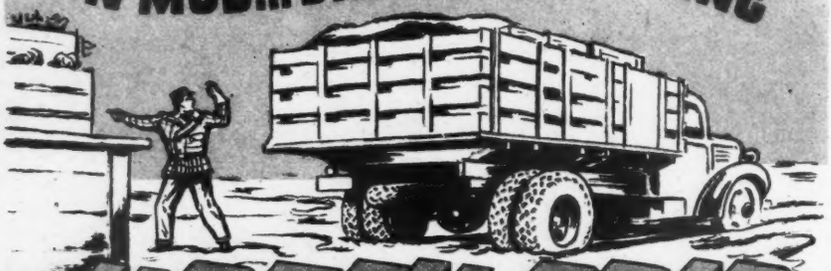
Please send your 1938 Sprayer Catalog to:

Name_____ Address_____

Kind of Fruit_____ No. of Acres_____

Pulls BACKWARD AS WELL AS FORWARD

IN MUD... SNOW... SOFT GOING

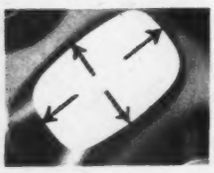


NOBBY GRIP

Gives this EXTRA PULLING POWER TO CARS AND TRUCKS

● Farmers know the need for extra pulling power *both ways* . . . backward and forward. That's why Nobby Grip with its all-direction traction has long been chosen as the tire for farm cars and trucks operating in mud, snow, and soft going. 25 years of experience have proved Nobby Grip the greatest traction design ever developed for farm work.

ALL-DIRECTION TRACTION



. . . deep, rugged Nobs, scientifically spaced and angled, dig down to firm footing—give *forward* and *reverse* traction, and *sidewise* grip.

AUTOMATIC SELF CLEANING

. . . 1. As the Nobs bite in, they grip the soil. 2. As pressure is removed the tire snaps back to normal shape, cleanly ejecting the dirt.

LONG WEAR . . . Scientific spacing of the Nobs evenly distributes the load . . . gives continuous road contact. Famous *Tempered Rubber* assures long wear.

LESS VIBRATION . . . Staggered Nobs shorten the time between impacts . . . evenly distribute the force . . . eliminate excessive jar and noise, giving greater comfort to driver.

U.S. NOBBY TRACTION *for* CARS & TRUCKS

REG. U. S. PAT. OFF.

United States Rubber Company

U. S. TIRE DEALERS MUTUAL CORPORATION

CALENDAR OF COMING MEETINGS AND EXHIBITS

The months of November, December, January, and February of each year see the culmination of efforts of state horticultural society secretaries in programs for their annual meetings covering vital fruit growing and fruit marketing issues of the day. Speakers include national authorities as well as successfully outstanding growers. The progressive grower never misses these meetings if he can help it, as they afford an opportunity to learn what other growers are doing and thinking and what new ideas, equipment, and materials exhibiting manufacturers have to offer. The dates of coming meetings received up to the time of going to press are given below. For further information regarding program, speakers, etc., a request to the secretary will give you the desired reply.

Nov. 10-11—West Virginia Horticultural Society Annual Apple Show, Martinsburg.—Carroll R. Miller, Sec'y, Martinsburg.

Nov. 11-14—Eighth annual Bangor Apple Show, Bangor, Mich.

Nov. 16-18—Minnesota State Horticultural Society annual meeting, St. Paul Hotel, St. Paul. Minnesota Fruit Growers Association annual meeting, Nov. 17-18, in conjunction with general meeting of horticultural society and affiliated organizations.—R. S. Mackintosh, Sec'y, Horticultural Society, St. Paul; J. D. Winter, Sec'y, Fruit Growers Assn., 786 Eustis St., St. Paul.

Nov. 16-19—Iowa State Horticultural Society annual convention and annual meetings of affiliated societies, Iowa State College, Ames.—R. S. Herrick, Sec'y, State House, Des Moines.

Nov. 17-18—Central Illinois Horticultural Society annual meeting, Peoria County Farm Bureau Bldg., Peoria.—Leo J. Hagemann, Sec'y, R. 1, Peoria.

Nov. 17-19—South Dakota State Horticultural Society annual meeting, Clark.—W. A. Simmons, Sec'y, Court House, Sioux Falls.

Nov. 18-19—Tennessee State Horticultural Society annual meeting, Jackson. Headquarters, New Southern Hotel; meetings in City Hall Auditorium.—G. M. Bentley, Sec'y, Knoxville.

Nov. 18-19—Wisconsin State Horticultural Society annual convention, Fruit Growers Section, Avalon Hotel, Waukesha.—H. J. Rahmlow, Sec'y, 1532 University Ave., Madison.

Nov. 30-Dec. 1—Kentucky State Horticultural Society annual meeting, Lexington.—Ben E. Niles, Sec'y, Henderson.

Nov. 30-Dec. 1-2—Northern Illinois Horticultural Society annual meeting, Aurora, in conjunction with annual meeting Illinois State Vegetable Growers Assn.—O. H. Waddell, Sec'y, Davis Junction.

Nov. 30-Dec. 1-2—Michigan State Horticultural Society annual meeting, Civic Auditorium, Grand Rapids. Also apple show.—H. D. Hootman, Sec'y, East Lansing.

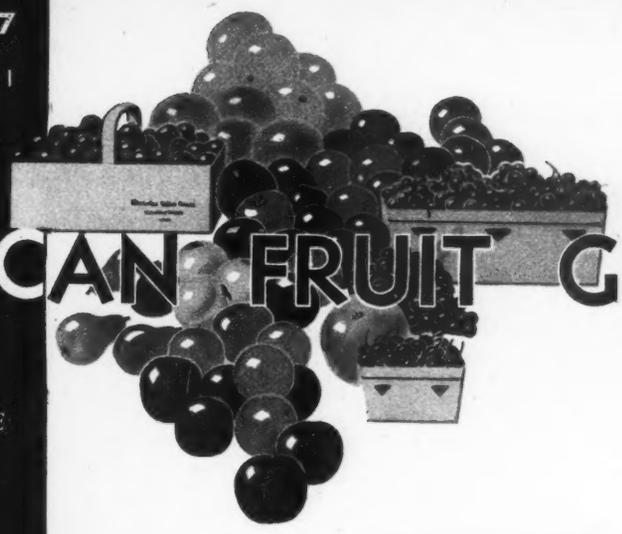
Dec. 1-3—New Jersey State Horticultural Society annual meeting, Haddon Hall, Atlantic City.—Arthur J. Farley, Sec'y, New Brunswick.

Dec. 2-3—Oregon State Horticultural Society annual meeting, Medford.—O. T. McWhorter, Sec'y, Corvallis.

Dec. 3-4—Montana Horticultural Society annual meeting, Missoula. Geo. L. Knight, Sec'y, Missoula.

(Continued on page 15)

NOVEMBER 1937
VOL. 57 NO. 11



AMERICAN FRUIT GROWER

The
NATIONAL FRUIT MAGAZINE

CONTENTS

Calendar of Coming Meetings and Exhibits 4
Evaluating the Dwarf Fruit Tree 7
By H. B. Tukey
Deacon Cherry Proves Popular 8
Fertilizer Helps for Plum Growers 8
Pear Notes 8
Small Game Hunting 9
By Wm. H. Zipf
American Pomological Society 10
A Page Conducted in the Interests of the Society
York Skin Crack, Hydrochloric Acid Injury and Heat Cracking 11
By D. F. Fisher
State News 12
Peat Moss Aids Post-Planting Growth 18
By Jonas Howard
Culls Are "Screenings" of the Apple Deal 19
By C. C. Taylor
Northern Nut Growers Meet 20
New Time and Money Savers 21
By Handy Andy
Successful Orchards 22
A "Round Table" Page for Every Grower

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90 YEARS OF THE APS

THE American Pomological Society is about to enter upon the ninetieth year of its eventful career. It is the oldest national agricultural organization in America. It seldom falls to the lot of any public service institution to cover such a long period of usefulness with an unbroken record of unselfish devotion to the welfare of any industry. That it should do so is evidence that the industry it serves has a vitality and significance beyond most and that the organization itself has functioned effectively.

The record of services rendered by the American Pomological Society includes several so distinct that the editors feel justified in reviewing them. Under the leadership of Marshall P. Wilder, Charles and Andrew Downing, Patrick Barry, Warder, Thomas, Rogers, and a host of others, the organization early studied the varieties of various kinds of fruits in America, discovered their adaptations and weaknesses, described them adequately and provided the public with information as to what should be planted and what avoided. The variety lists issued at intervals from the time of the formation of the society up to the early nineties are the basis for American Pomology and the scientific background for fruit breeding materials to the present time. The committee on new fruits keeps this service up-to-date by publishing annually a complete list of every new variety offered to the trade in any current year.

It is hard to measure the value of the stimulus given to the origination of new fruits, and new ideas and exhibitions in Pomology, through the awarding of Wilder medals and other awards of merit granted by the organization. Approximately 250 recognitions of this kind have been made by the society.

When the American Pomological Society prepared and adopted a code of nomenclature, which compared ethically and practically with the scientific codes of nomenclature, it helped to bring order out of the chaos which prevailed among nurserymen and others in the naming of fruits. From time to time its rules are restudied and made to meet modern developments and situations. This magazine published its revised code only two years ago.

Since 1848 the proceedings of the American Pomological Society form a valuable record of the progress of American Pomology. There can be found the story of progress in knowledge of cultivation, fertilization, pruning, training, packing, storage, transportation, marketing, and advertising of fruits; the story of the ups and downs, financially and otherwise, of the pomological industry, the fungous and insect pests of fruit trees and plants, the efforts to control them, the transition from a nation of amateur or home fruit growers to a nation where commercial fruit production dominates. To have gathered the leaders of the industry together, at least once in every two years during this long period, and to have published their advice, is a service the total effects of which no one can fully evaluate. Certainly it has been a large factor in making the United States the leading fruit producing country of the world.

The fruit grower notes with hearty approbation the adaptation of the American Pomological Society to the modern needs of the fruit industry, particularly in the field of hardy fruits. Without interrupting its traditional role of a High Court in matters of variety and nomenclature, or its interest in production problems, it has expanded its publication and education program by holding annual instead of biennial meetings, by publishing its proceedings annually, and by maintaining its regular monthly page in this magazine, and, in addition, has undertaken service features of great importance to some branches of the industry. Notable among these have been the efforts to get spray residue tolerances established on a scientific basis, and to unite the apple industry in support of a national movement to promote a greater use of that fruit.

There is no man now living who was present when the American Pomological Society was organized in 1848. The organization has seen Chicago and New York grow from small cities to the gigantic proportions of today, the population of the country itself grow from 31 millions to 130 millions, and transportation completely transformed in character. Illinois was still a pioneer State and the Mississippi River almost the western boundary of industrial and agricultural development in America when the founders started the organization. But the American Pomological Society has maintained an honorable and useful standing throughout the changes around it, and has enlarged its effectiveness. We congratulate it and look forward eagerly to the day 10 years hence when we can congratulate it on beginning its centenary year even as we do at the beginning of its ninetieth.

Repair Bill for 6 Internationals Only $93.75 for 555,247 Miles

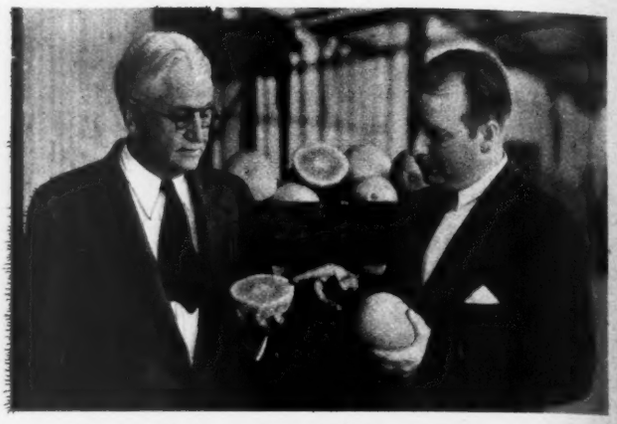
"The quality and expert engineering of International Trucks makes them the most economical and dependable trucks on the market."

This statement, from a letter written to the Orange State Motor Company, Tampa, Florida, by L. C. Edwards, Jr., representing the Pasco Packing Association, Dade City, Florida, testifies to the performance of International Trucks in the fruit industry.

Excerpts from the letter follow:

"It is with pleasure that we give you this order for eight more International Trucks, for delivery next season, to be used in hauling fruit from the groves to our packing house. We would also like to tell you about the record we have made with Internationals last season, which we don't believe has ever been equaled by any fleet of motor trucks.

"We purchased last year six Model CS-40 Internationals of 3-ton capacity. With these six Internationals and semi-trailers we transported from our packing house in Dade City to the steamship lines in Jacksonville more than 400,000 boxes of packed citrus fruit. At the end of the season the total mileage on these six trucks was 555,247 miles, ranging from 80,000 to 102,000 miles on each truck. The *total cost* for repairs due to natural wear was *only $93.75 for the six trucks.* The trucks operated under continuous strain. Every truck has carried the maximum load on every trip as allowed by our state law, which is 34,000 pounds gross. These figures are actual.

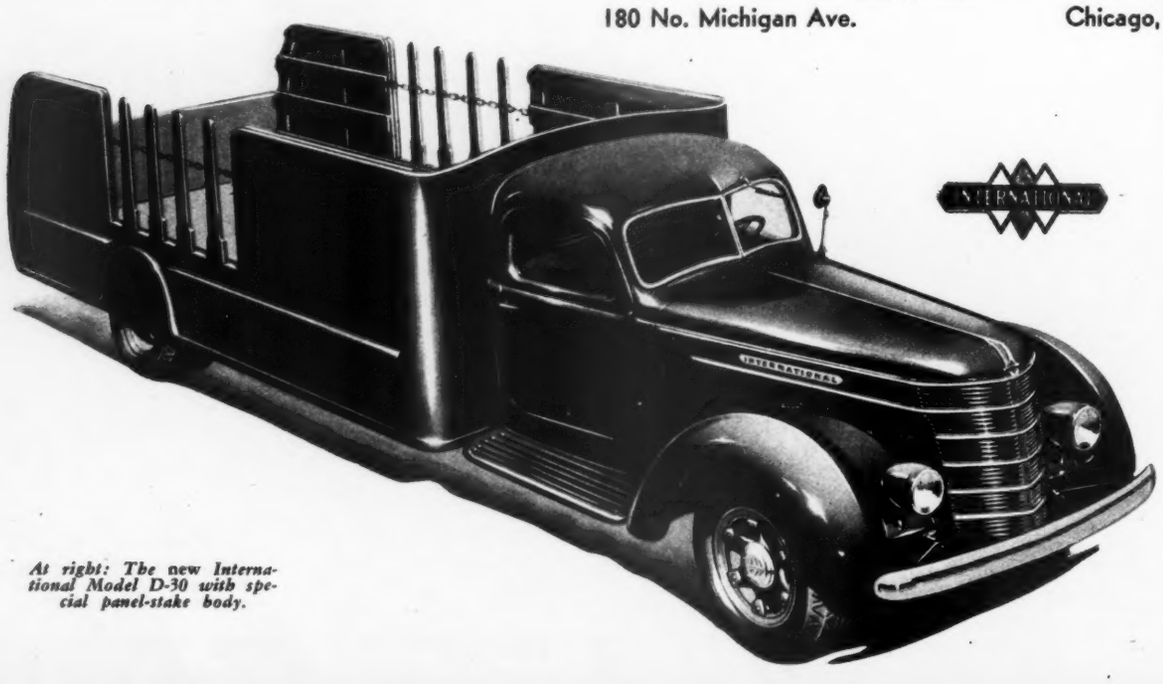


L. C. Edwards (left), president of the Lee and Edwards Corporation, Tampa, Fla., and his son, L. C. Edwards, Jr. (writer of the letter at the left) discuss a shipment of grapefruit. Father and son work together in the management of extensive groves. Edwards, Jr., manages the Lee and Edwards Corporation fleet of 14 Internationals.

Yours truly,
PASCO PACKING ASSOCIATION
By L. C. Edwards, Jr. (Signed)

Ask the International dealer how these economical trucks can benefit you.

INTERNATIONAL HARVESTER COMPANY
(Incorporated)
180 No. Michigan Ave. Chicago, Illinois



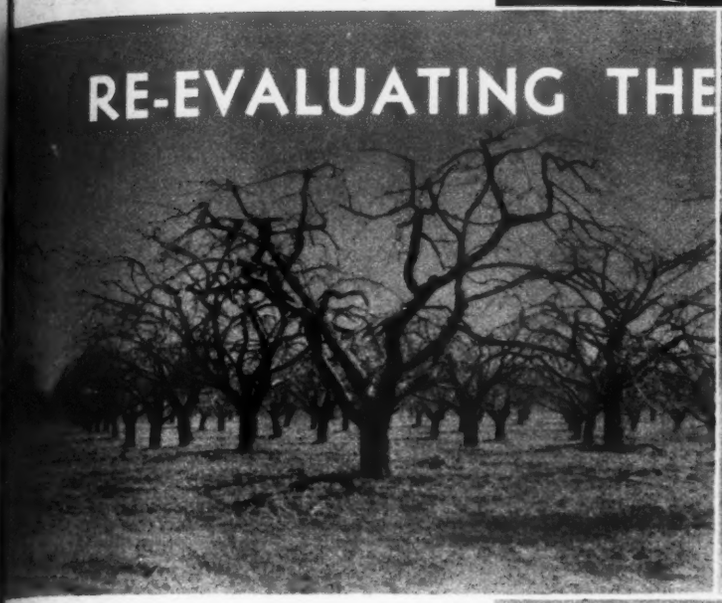
At right: The new International Model D-30 with special panel-stake body.

INTERNATIONAL TRUCKS

Right—It is a real acrobatic feat to harvest apples from a 26-rung ladder. Below (across-the-page panel)—Attempts to produce lower trees by drastic pruning are illustrated in the apple orchard on the left and the Kieffer pear orchard on the right.

Immediately below across-the-page panel—It was dwarf trees of this type which were unsuccessful under American conditions. Bottom—Semi-dwarf trees of this type, which have never been given a trial in America, offer promise. (Both photos taken in England.)

RE-EVALUATING THE DWARF FRUIT TREE



By H. B. TUKEY

New York State Agricultural Experiment Station

THERE is a real awakening in America to the consciousness of a rootstock problem for fruit trees. A few years ago it was easy to dismiss the subject with a shrug of the shoulders or by merely saying, "Show me something better than we already have or there is no use talking!" Today, fortunately, the attitude is different. If it were not, of course, there would be little progress. The spray residue problem was upon the fruit industry before washers and washing methods had been devised. The quest continues for new varieties of fruit to outmode the ones which are today the basis of the industry. And so, far-sighted fruit growers are attempting to anticipate their problems and be ready for them when and where they arise. The rootstock problem is apparently one of them.

This interest does not come from any one source or direction—instead it seems to be a far-flung national appreciation of the entire problem, which has slowly but steadily rolled up from all sides. It may be merely that as the more immediate and more pressing problems of the fruit industry have been met and understood, and as new problems have presented themselves, the rootstock problem has become the next due to be scrutinized and critically analyzed.

Certainly it is true that the methods of propagating a fruit tree, the roots upon which a tree is grown, and the relation between stock and scion have gone all but unnoticed in American horticulture in recent years—particularly in the East. It is safe to say that few fruit growers have had any really vivid picture of a fruit tree as made up of two individuals growing together as one. And fewer still have known how those trees were produced, why they were propagated as they were, and from where came the rootstocks and what type of materials they were. A fruit tree was something that one got from a nurseryman, "just as a baby comes from the hospital," and nothing much more was said about it. And so it may be that this interest in fruit tree rootstocks is simply a natural curiosity about the whole affair.

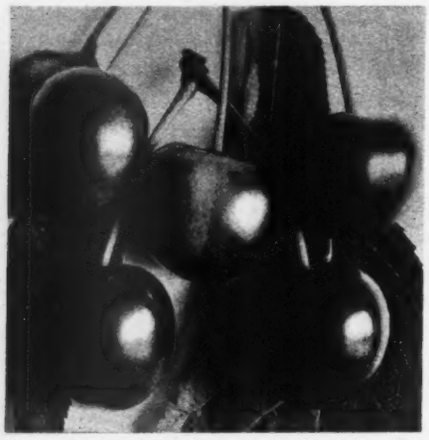
Then again, it may be that it is the recent impact of Old World horticulture upon American practice which is responsible—brought about by more frequent visits of Americans to European horticulture, and where the rootstock is as carefully considered as the scion variety itself and in conjunction with it. *(Continued on page 14)*

CHERRIES •

DEACON IS POPULAR

Untimely rains with resulting cracking of Lambert and Bing cherries have forced growers in the Lewiston, Idaho, section to look for a substitute variety.

Clyde Stranahan, prominent grower, reports that: "This was the worst season for cherry cracking in the district's history. When loss of Bings and Lamberts ran from 70 to 100 per cent, damage to Deacons was only about 10 to 25 per cent. I spent several years trying to get some Deacon trees because they are excellent pollinizers. I didn't have much luck until, through a series of contacts, I learned that some of the cherry trees on my own place were the Deacons I had tried so hard to get."



The Lambert cherry, reported losing popularity in Idaho cherry section because of cracking which caused 70 to 100 per cent loss this year.

Besides being more resistant to cracking and a good pollinizer, says Stranahan, the Deacon matures earlier, is a heavier producer, and stands up better in shipment than Bing and Lambert. The Deacon is also preferable to Bing for processing, he says, although it is not so good for eating out of hand.

University of Idaho's horticulturist, Dr. Leif Verner, is another booster of the Deacon. He says: "It is my personal opinion that the Deacon holds considerable promise as a variety to replace the Bings at Lewiston and possibly to replace a certain percentage of Lamberts in the territory. This, of course, is a long-time proposition, but I think we should plan for the future of the district."

PLUMS •

FERTILIZER HELPS

Practical fertilizer tests conducted on farms of California prune growers have provided an answer to the question, "Is it possible to obtain profitable results from the use of fertilizers in unirrigated orchards?"

Potash and nitrogen were applied in the orchard of F. F. McQuilkin, Gilroy. The addition of potash alone gave an increased return per acre of $43.71 in 1935 and $44.69 in 1936. On the plot receiving both nitrogen and potash the increased value of the crop amounted to $135.15 in 1936.

Trees receiving potash withstood drought and a hot spell before harvest better than the check trees. Foliage color was good throughout the season. The plot having only nitrogen showed considerable response, but symptoms of potash deficiency were still evident.

Drought and the hot spell caused leaf scorch, mottling, and twig dieback on the trees receiving no fertilizers.

Similar results were obtained in tests conducted at the Carl Schrader orchard, Morgan Hill.

These experiments indicate that prune growers in unirrigated sections can increase profits by the use of fertilizers.

California prune orchard during dormant period. Trials have shown that fertilization of unirrigated prune orchards gives profitable results.

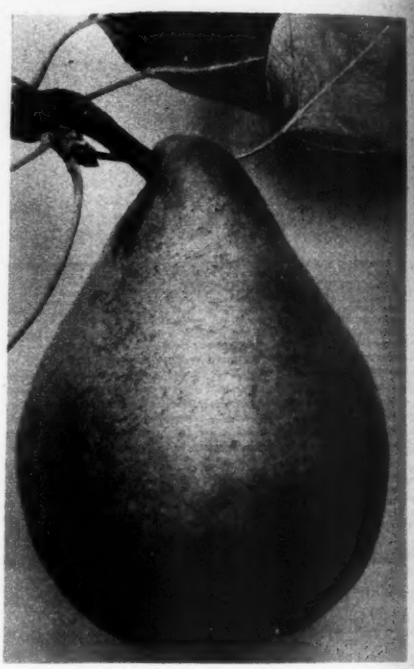
PEARS •

NECTAR SUGAR

With discovery that Bartlett pear nectar contains only 10 per cent sugar, the reason why growers in Oregon have had trouble getting bees to work on Bartlett blossoms has been revealed. It was found that the sugar content of other plant nectars is: Italian prune, 41 per cent; Oregon grape, 63 per cent; maple, 67 per cent; and willow and mustard, 70 per cent. Bees apparently choose to pass up the pear blossoms for the other sweeter nectars.

STORAGE HOLDINGS

Bartlett pears in storage on October 1, according to the U. S. Bureau of Agricultural Economics report, amounted to 204,000 packed boxes compared to 434,000 for the same date last year. There were 934,000 loose boxes of Bartletts as against 565,000 last year. Boxes of all other varieties amounted to 1,876,000 while last year this number was 1,839,000 on the same date. The 101,000 bushel baskets of pears represent larger reserves than the 91,000 being held last year on October 1.

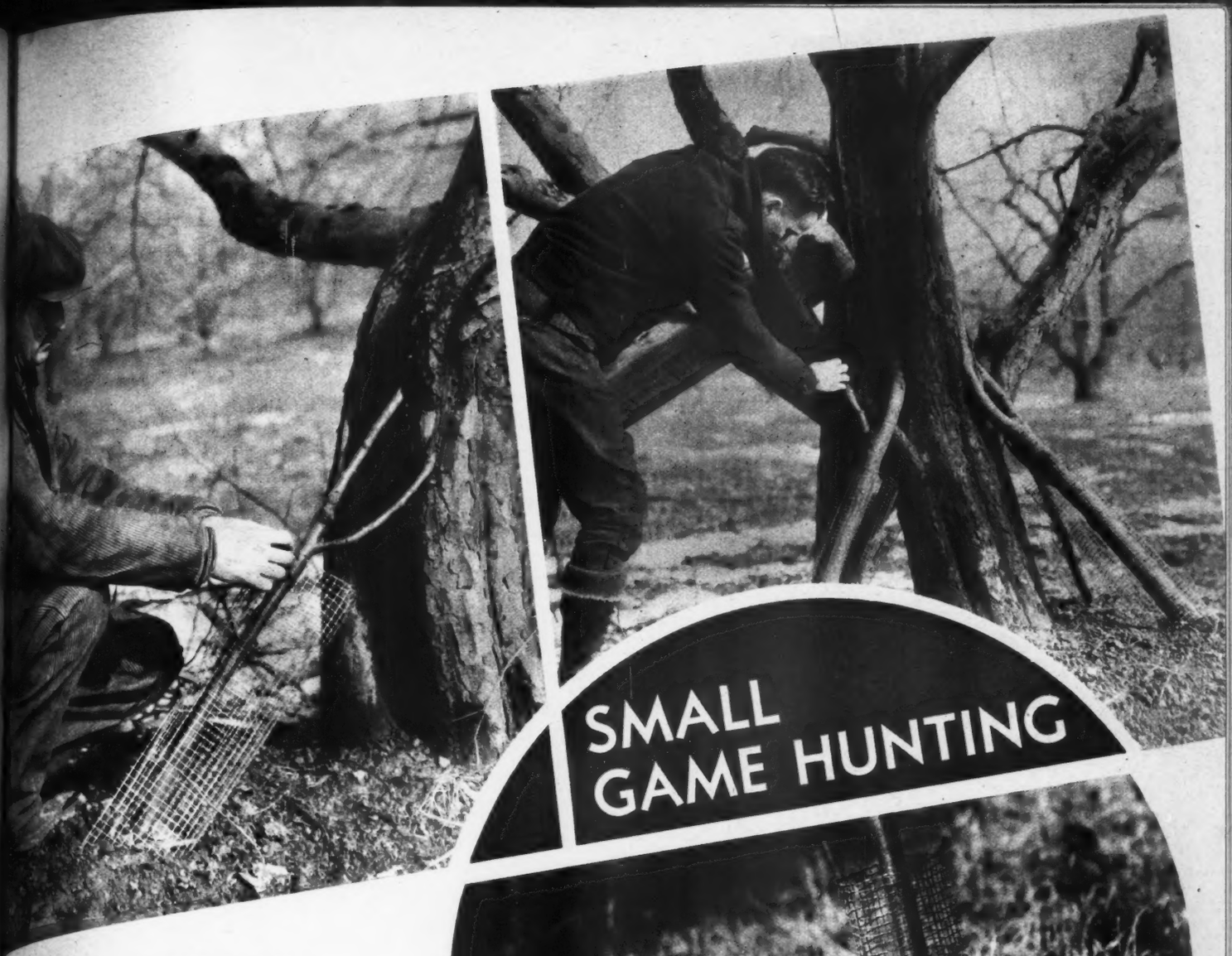


The Gorham pear, outstanding among the recent pear variety introductions. Its performance has been such that it is now recommended for planting.

ADVERTISING

Faced with a bumper crop, California pear growers this fall turned to a nation-wide advertising campaign to boost sales. Large advertisements were run in newspapers of larger cities in all sections of the country. Advertisements stressed

(Continued on page 18)



SMALL GAME HUNTING

Above, left—Young stocks of in-arch, or approach grafts must be protected from rodents. Above, right—Inspecting in-arch grafts which are often necessary to revive trees after rodent injury. Lower photo shows young cherry tree protected with wire mesh.

By WM. H. ZIPF
Field Editor

ZOOLOGISTS tell us that rodents are the largest single group in the animal kingdom, that more than a thousand species make up this order. And after seeing the damage that rodents sometimes cause in an orchard we are ready to concede that at times they can be the most injurious type of animal.

Of greatest general importance are mice. Two kinds are usually responsible for fruit tree injury—pine mice and their close relatives, the familiar meadow or field mice. While the injury they cause to trees may be the same, they differ in feeding habits and the range which they infest.

Meadow mice may be found in any part of North America, but pine mice are restricted to the eastern United States, from the Atlantic Coast to eastern Kansas and Nebraska; from the Gulf of Mexico to the Great Lakes region.

The pine mouse is a burrowing mammal which feeds on sub-surface tree parts and lives mostly underground. Because of this habit, the devastating work of pine mice is often carried on unnoticed. Oppositely, meadow mice feed mainly at the surface, although this species frequently makes use of shallow tunnels and nesting chambers.

Wire mesh protectors and practices of clean cultivation used by many growers for successful control of meadow mice give only slight suppression of pine mice. Poison bait is the only effective control measure for the latter pest. Bait is also of value in reducing number of meadow mice.

Biologists of the U.S.D.A. have observed that mice show a preference for vegetable baits, such as sweet potatoes and carrots. Steam-crushed whole oats, or rolled oats, are also readily devoured.

To make vegetable bait, cut three quarts of sweet potatoes or carrots into one-half inch cubes. Mix one-eighth ounce of powdered strychnine and the same weight of baking soda. Using a pepper box, sift this mixture over the vegetables; stir constantly to distribute poison evenly.

To make rolled oats bait, take the

(Continued on page 20)

APS

A PAGE CONDUCTED IN THE INTERESTS OF THE AMERICAN POMOLOGICAL SOCIETY

AMERICAN POMOLOGICAL SOCIETY

Celebrating its Ninetieth Year, Announces Preliminary Program of its

53RD CONVENTION

at Springfield, Mo., December 8, 9, 10, 1937

co-operating with

THE MISSOURI STATE HORTICULTURAL SOCIETY,
THE HORTICULTURAL SOCIETIES OF ARKANSAS, OKLAHOMA AND KANSAS
THE SPRINGFIELD CHAMBER OF COMMERCE

Headquarters Hotel, The Kentwood Arms

Meetings and Exhibits in The Shrine Mosque

The program follows, subject to minor revisions:

Wednesday, December 8

9:30 Invocation—Rev. Dr. M. Owen Kellison, Pastor, South Street Christian Church, Springfield, Mo.
Address of Welcome—Lester E. Cox, President, Chamber of Commerce, Springfield, Mo.

10:00 Progress in Strawberry Culture and Breeding—George M. Darrow, Specialist in Small Fruits, U.S.D.A., Washington, D.C.

10:45 The New Brambles—Dr. A. S. Colby, Professor of Pomology, University of Illinois, Urbana, Ill.

11:15 Growing Quality into Tomatoes for Canning—J. W. C. Anderson, Extension Horticulturist, University of Missouri, Columbia, Mo.

12:00 American Pomological Society Luncheon—Kentwood Arms Hotel.

1:30 Processing Tomatoes for Quality—J. W. Lancashire, Continental Can Co., Chicago, Ill.

2:00 Red and Black Raspberries, New Varieties, Culture, Management—Dr. A. S. Colby.

2:30 Grape Varieties and Their Special Adaptations—F. E. Gladwin, New York (Geneva) Agricultural Experiment Station, Fredonia, N.Y.

3:30 Outstanding Results of the Experimental Work With Grapes at the Mountain Grove Experiment Station—P. H. Shepard, Director, Mountain Grove, Mo.

6:00 Allied Industries Dinner—Kentwood Arms Hotel.

8:00 Hill Billies Entertainment and Apple Knockers' Ball—The Shrine Mosque.

Thursday, December 9

9:00 Advertising Apples—W. B. Baughman, Manager, Mooseye Orchards, New Concord, Ohio.

9:45 Doc Apple—A talking motion picture depicting the growing, packing, distribution, and utilization of apples.

10:30 Health and Food Values of Apples—Dr. F. T. H'Doubler, President, Medical Section, Missouri Academy of Science, Springfield, Mo.

11:15 The Place of Research in a Program for Increasing Apple Consumption—APS President's address, B. S. Pickett, Ames, Iowa.

12:00 American Pomological Society Luncheon—Kentwood Arms Hotel.
Missouri Apple Growers Advertising Conference—Ozark Hotel.

1:30 The Value of Fruits in the Human Diet—By a national authority.

2:30 Merchandizing Fruits in the General Market—J. Milton Blair, Vice President, J. Walter Thompson Co., Chicago, Ill.

3:00 Apples in the Restaurant Business—John W. Thompson, Jr., Manager and Proprietor, The Thompson Restaurants, Chicago, Ill.

3:30 The National Apple Institute—Dr. J. H. Gourley, President, National Apple Institute, Head, Department of Horticulture, Ohio State University, Columbus, Ohio.

6:00 All Horticultural Banquet—The Shrine Mosque.

Friday, December 10

9:00 Ozark Peach Growing—J. R. Cooper, Head, Department of Horticulture, University of Arkansas, Fayetteville, Ark.

9:45 Discussion in Peach Growing—Led by Grant Fox, Vice President, APS, Normandale, Ont., Canada.

10:00 Some Research Studies of Interest to Fruit Growers—Dr. A. E. Murneek, University of Missouri, Columbia, Mo.

10:30 The APS Tour of 1937, Illustrated—Dr. Sam Edgecombe, Extension Horticulturist, Iowa State College, Ames, Iowa.

11:00 Possibilities of Developing a Nut Industry in the Central States Area—F. B. Cross, Head, Department of Horticulture, Stillwater, Okla.

11:30 Reports of Resolutions Committees—All societies.
Election of Officers—All societies.

12:00 American Pomological Society Luncheon—Kentwood Arms Hotel.

1:30 Varieties of Plums, Prunes and Cherries for the Central States Area—Paul H. Shepard.

2:15 Advances in Codling Moth Control—By a representative of Bureau of Entomology for Central States Area, U.S.D.A.

3:00 Discussion on Codling Moth Control—Led by Dr. Leonard Haseman, Head, Department of Entomology, University of Missouri, Columbia, Mo.

EDUCATIONAL

FRUIT shows are always a point of interest not only to growers but to the general public as well. A great fruit display at the Springfield convention is assured. It is designed to bring together fine exhibits of fruits, especially apples, for competitive display, and, more important, to enable growers and the general public to see and study the many varieties grown in the Mississippi and Missouri valley regions. Full particulars as to making exhibits can be secured from W. R. Martin, secretary, Missouri State Horticultural Society, Columbia, Mo.

A special plea is being made to fruit growers and experiment stations to make exhibits of new varieties of fruits and nuts so that an opportunity will be provided for study and comparisons. New varieties are numerous and many of them are making strong bids for a place on the planter's list. Many fruit growers and experiment stations are growing new varieties for the purpose of testing their tree and fruiting behavior. A fruit show of this kind is the one great opportunity for us all to get together and swap experiences we have had with the new fruits.

Wilder Medal Awards will be made to recognize any new varieties which are submitted for such recognition. Evidence of the past performance and general merit of the variety must be presented to the Committee on Wilder Medal Awards by the exhibitor. These awards are very carefully made and only after the exhibitor has presented satisfactory proof of the general desirability of the new variety from the standpoint of tree growth, productivity and hardiness, and after the fruits are known to have distinct merit as to size, color, quality, and season. For further information write Prof. C. P. Close, senior extension horticulturist, U.S.D.A., Washington, D.C.

Advertising

Apple advertising never needed emphasis more than it does in this bumper-crop year. Accordingly, a large display of apple advertising banners, placards, etc., is being brought together to show the character and kinds of advertising that is being done by the apple growers and their chosen organizations.

This will be a highly colorful exhibit and will bring together in one display many of the salient features which have been developed to reawaken the American household to the desirability of using larger quantities of the King of Fruits.

Fruit growers, horticulturists, and friends are cordially invited to attend this regional convention. The Missouri Horticultural Society is well known in the Middle West for its fine hospitality, and fruit growers and their friends will find new inspiration by attending the convention and participating in its educational program and fruit show. Furthermore, large and comprehensive exhibits of orchard equipment, sprayers, spray materials, packages, etc., will be shown by commercial concerns. These exhibits are always manned by able representatives, who are very often able to provide growers with the very information which they may need relative to some specific problem in the orchard or packing shed.

Memberships

If you cannot attend the convention, you will want the proceedings of the meetings. This report will be sent to all paid-up members of the APS. The annual fee is $1.25, and also entitles members to a year's subscription to AMERICAN FRUIT GROWER. Send all remittances for fees to Secretary H. L. Lantz, Ames, Iowa.

H. L. Lantz
SECRETARY

YORK SKIN CRACK
HYDROCHLORIC ACID INJURY
AND HEAT CRACKING

By D. F. FISHER
Principal Horticulturist, U. S. D. A.

CONSIDERABLE confusion exists concerning the cause of injuries often found to be particularly prevalent on York Imperial apples. Apples of this variety are frequently found with more or less severe skin cracking, often accompanied by wilting or shriveling and sometimes with secondary rot infection starting at the cracks.

There are at least three different types of skin cracking which may be found at time of packing and which may be confused.

1. "York skin crack" (figures 1, 2, and 3) develops on the apples before harvest but late in the growing season, generally becoming more severe as the fruit progresses in maturity. It is usually most severe on the shaded side of the fruit. While this trouble or one very similar to it occasionally appears on other varieties, it is so prevalent on York Imperial as to justify the varietal designation in the name "York skin crack." From recent observations it appears to occur on fruit grown on trees of comparatively low vitality or affected by drought conditions during the growing season. It seems to be worse on light crop trees than on those bearing heavy crops. There is considerable evidence that the severity of the trouble is increased markedly by late rains which cause the fruit to swell rapidly. The affected apples usually have a rough, nonwaxy skin at time of harvest in contrast to the smooth and waxy finish of normal York Imperial apples.

In this trouble, cracks show a tendency to run in a latitudinal direction but not so generally as in "heat cracking." If there is a worm sting, hail scar, or other old injury on the fruit, the cracks will usually be found running somewhat concentrically around these foci. The cracks may make a somewhat wavy line and vary from being barely discernible to being open as much as one-sixteenth of an inch.

(Continued on page 16)

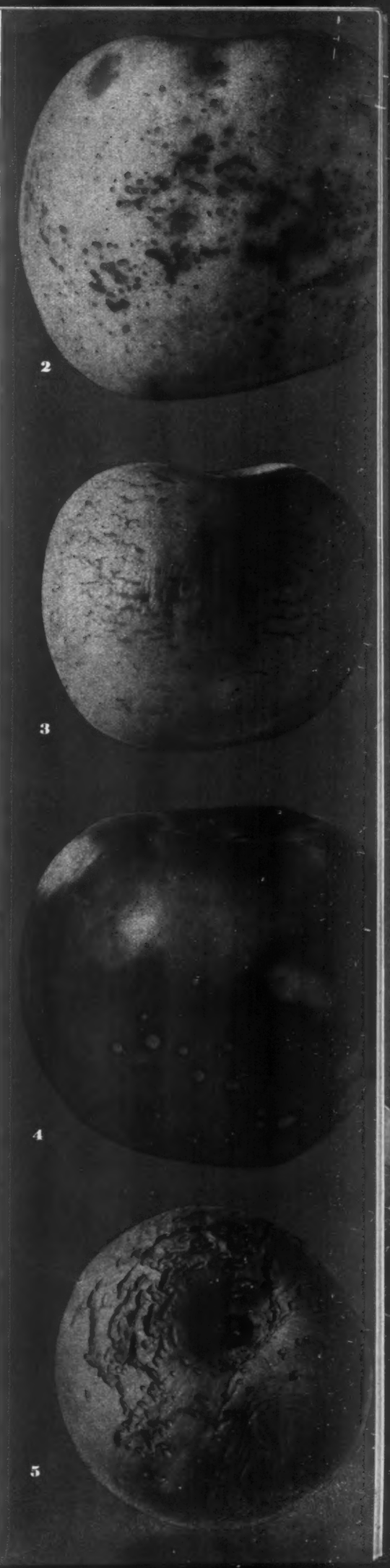


Figure 1 (outlined apple above)—Early stage of York skin crack.

Figure 2—Late stage of a severe case of York skin crack, showing blackened margins and grayish colored skin where it has been pulled loose from flesh.

Figure 3—Showing wilting which usually follows York skin crack, either before harvest or during storage.

Figure 4—Hydrochloric acid injury. Note that spots are generally circular in outline and definitely sunken.

Figure 5—Heat cracking. Note latitudinal arrangement of cracks.

STATE NEWS

VERMONT—Alert to modern marketing methods, Vermont fruitmen have been engrossed in a titanic program of construction of mechanically-cooled fruit farm storages to house the 1937 apple crop. Capacities range from 22,000 to 75,000 bushels.

Notable among those who have built storages are William H. Darrow in Windham County (cost of storage $12,000; capacity 22,000 bushels); Sherman Allen in Rutland

County (75,000-bushel storage, costing around $40,000); Vermont Apple Company (formerly known as Grand Isle Orchard Company) in Grand Isle County, which is under supervision of Karl Weber, superintendent.

Other large storages include those of Vermont Fruit Company and Champlain Valley Fruit Company in Chittendon County; Thomas Lumbra in Rutland County; Connecticut Valley Orchard Company and Scott Farm in Windham County, the latter being operated by F. C. Holbrook and J. A. Marshall.—M. B. CUMMINGS, Sec'y, Burlington.

WISCONSIN—Recent work at Wisconsin Experiment Station has proved that root injury to strawberries occurs in early winter or late fall.

To prevent such injury, growers are urged to mulch their strawberries before the first hard freezing weather arrives. Fine marsh hay is recommended, and foliage should be entirely covered.

Officers of Wisconsin Horticultural Society are being elected by mail this year, previous to the annual meeting. Thus members who are unable to attend the meeting in November have an opportunity to cast a ballot.—H. J. RAHMLOW, Sec'y, Madison.

FLORIDA—A greatly expanded Federal-State Horticultural Protection Service will keep tab on the weather for Florida citrus growers during the 1937-38 season, according to Eckley S. Ellison, meteorologist in charge, with headquarters at Lakeland. Inaugurated in 1935, this frost forecast service has proved exceptionally accurate in warning growers of impending frosts.

Establishment of additional temperature stations, issuance of two temperature bulletins, and one shippers' bulletin daily, expansion of experimental work in connection with temperature inversion, and issuance of special

forecasts for elevations ranging from 25 to 100 feet will be features of the service during the coming season.

The service now has 350 temperature stations in the State, a much larger number than last season. This will enable it to keep a closer check on weather conditions and will be valuable in establishing weather data.

The service will begin its 1937-38 season early in November.

NEW YORK—A local chain store executive who is vitally interested in the success of the National Chain Store Producer-Consumer Apple Campaign gave some rather strong medicine to a western New York fruit grower this fall, which may be worth passing on to others by way of suggestion.

The grower had apples to sell to the chain store. "Do you belong to the Apple Institute and what are you doing as part of an organization to help yourself?" was the executive's question. "Nothing much," was the reply of the grower. "All right," said the executive, "join the Apple Institute and do something for your own industry and I will buy your apples." And he did.—H. B. TUKEY, Geneva.

WASHINGTON—Program for 33rd annual meet of Washington State Horticultural Association, December 6-8, Wenatchee, will include, among a variety of topics, talks and discussions on: Commercial hand pollination of apples; present status of "Dynamite" sprays; sulphur and lime-sulphur sprays; substitutes for lead arsenate; irrigation of apple orchards; storage studies of apples and soft fruits; use of boron in controlling drought spot of apples.—J. C. SNYDER, Sec'y, Pullman.

CANADA—At Port Stanley, Ontario, a profitable use for orange crates is found after they have served their original purpose. There, at famous Hill Crest Inn, the kindly father of

the proprietress spends his leisure hours in his workshop turning out the most whimsical, exotic weathervanes you could ever imagine. They are constructed entirely of orange crates—and it is reported trade is far in excess of available crates.

CALIFORNIA—Energetic California Fruit Growers Exchange has released an educational color film featuring oranges and lemons as well as avocados and other fruits and dairy products. Automatic refrigeration also comes in for attention. The film was produced in co-operation with five manufacturers whose products are non-competitive.

WEST VIRGINIA—Using apparatus especially designed for low-temperature control work, studies of winter hardiness of peach fruit-buds, involving over 60 varieties, were made by West Virginia Experiment Station.

Varietal differences, it was found, are less manifest in fall and early winter, when buds are in the rest period, than in late winter and early spring, when developmental changes have taken place. Buds become more tender, however, after a warm spell even in late fall.

In 1935 buds of five varieties showed slight to severe injury when exposed to minus five degrees F on January 12. When same exposure was repeated on January 21 following several days of 50 to 60-degree temperatures, severe killing resulted. Rate of temperature fall was found to be important, most severe injury resulting from sudden drops.

Winter injury studies of apple fruit-buds showed that the conducting tissue at the base of the bud is more subject to injury than the bud itself. Center flower of cluster was often injured at minus 16 degrees F. Rome, McIntosh, and Transparent were the hardiest of the varieties tested.

IDAHO—Growers were well pleased with the prices received for the total of over 700 cars of prunes shipped this year. About 650 of these cars graded U. S. No. 1.

A large crop of apples will be harvested. Prevailing prices are fair. The government through the Federal Surplus Commodities Corporation has been buying some Jonathans at 60 cents a bushel fancy grade and better. —W. T. CALLENDER, Director, Bureau of Plant Industry, Boise.

MISSOURI—Never before organized for promotion, apple growers of the State this fall formed the Missouri Apple Institute. Assessment of one cent a bushel on the 1937 crop of participating growers is being made. Membership is voluntary. Expected harvest: 4,000,000 bushels.

Kirk L. Keller of Creve Coeur is chairman of the institute. Other members in charge of activities are: W. R. Martin, Jr., Columbia; Paul Stark, Louisiana; Frank D. Connett, Faucett; and George P. White, Marionville.

PENNSYLVANIA—Activity in construction of cold storage facilities on fruit farms has been keen. A good portion of the apple crop is going into these storages, to be fed into the market during the winter and spring months.

W. Howard Cowen in Blair County is among the growers who have been active in the erection of refrigerated storages. He has provided for 15,000 bushels. While most of the production of Irvin Zook will be stored in his own storage facilities in Blair County, any surplus will go into commercial storage. Snyder Brothers in Bedford County have just completed a large stone cold storage, while Harry Snowberger, also in Bedford County, enlarged his storage buildings. A. Woodward Smith in Indiana County has built storage facilities for a portion of his crop. Cold storage warehouse of Thomas K. George in Indiana County will house some of his production of around 10,000 bushels.—J. U. RUEF, Sec'y, State College.

NORTH DAKOTA—A variety of raspberry which has been on trial under the number N.D. P117 has just been given the name

Garnet. This is a purple variety of raspberry, a second generation seedling from a cross between Plum Farmer and Latham. It apparently combines the hardiness of Latham with the heat and drought resistance of Plum Farmer. It has lived through and fruited under conditions where other varieties were practically destroyed by red spider.

The fruit, as indicated by the name, is purple, somewhat the color of a garnet. It reproduces by means of suckers, but the suckers are not so abundant as in true red varieties.—A. F. YEAGER, Sec'y, Fargo.

NEBRASKA—While the bushel basket is still the standard receptacle for apples, Shubert Orchard Company in Richardson County is finding the mesh bag an excellent container for apples moving into immediate consumption. Other growers are using paper sacks to advantage for this class of fruit.

Apple demand has been fairly active with prices fair. Low-grade apples have had ready sale into drought areas of central and western Nebraska. Better grades are moving into areas where better crop conditions have existed and into the larger cities.—E. H. HOPPERT, Sec'y, Lincoln.

IOWA—Due to meager rainfall and consequent dry condition of soil (Iowa as a rule has from four to six inches of rain during August, September, and October), many apples have not matured as well as normal. Jonathan color has been good but Delicious poor. Picking of the latter variety had to be rushed on account of dropping.

George A. Schurk in Lee County is harvesting about 5000 bushels of splendid No. 1's from his 40-acre apple orchard planted in 1921. Yield last year was 11,000 bushels; in 1935, 5000.

Growing practically in sand, and being located near the Mississippi River, the Schurk orchard is irrigated when necessary. A complete fertilizer is also used.

While apple prices are not as good as last year, a fair profit is being made by growers.

Grape crop was very heavy. Prices ranged from one and one-half cents per pound on the vines to two and three cents delivered. In my own vineyard I have been selling grapes on the vine with good results.—R. S. HERRICK, Sec'y, Des Moines.

MICHIGAN—Three major developments combine to brighten the horizon of apple growers, to wit: A large volume of storage demand from retailers and dealers; decision of the Federal Surplus Commodities Corporation to purchase 5,000,000 bushels of apples in the United States for welfare distribution; a larger export demand. A small apple crop is indicated in European importing countries, and France and other countries have recently reduced barriers against imports of apples.

State apple grading rules have been abandoned. All apples in the State are now being graded according to Federal standards.

TENNESSEE—Through the generosity of the Jackson business men and the trades associated with fruit growing, a fund of nearly $100 in cash and prizes has been contributed to be awarded as prizes in a competitive fruit exhibit at the annual meeting of Tennessee State Horticultural Society, Jackson, November 18-19.

Baer Ice Company, Jackson, has opened a 20,000 bushel capacity custom fruit storage. For the past several years no storage facilities have been available and because of the large crop of high quality fruit in that territory, local growers appreciate this service.

Messrs. Everett Bonham, Chilhowie, Va.; Alfred A. Swann, Dandridge, Tenn.; and J. C. Patrick, Fayetteville, Tenn., have been appointed as a committee of three to serve as this State's representatives on the National Apple Stabilization Committee. Each of these members operates over 300 acres of Tennessee orchards and is keenly interested in the successful operation of this nation-wide effort of fruit growing organizations toward a fair and profitable disposition of the apple crop.

Dr. Hy M. Carr in Roane County is laying plans for construction this fall of a cold storage and space for new packing facilities.

In the Shady Valley orchards of Bonham Brothers an apple harvest approaching 100,-

(Continued on page 15)

HARROWS 80 ACRES, DISKS 16-IN ONE AFTERNOON

Work moves a lot faster on Warren Watson's 488-acre farm at Ludlow, Ill., since he high compressioned his Allis-Chalmers tractor.

WARREN WATSON SAYS, "I have used regular-grade gasoline for the last seven years and wouldn't use anything else in a tractor."

• • •

(at left) MR. WATSON driving his Allis-Chalmers UC which was recently high compressioned.

WHEN you farm over 400 acres with one tractor, you need all the power your tractor can develop to keep the work up in shape. Last January, Warren Watson high compressioned his Allis-Chalmers UC to get more power. Here's what happened, in his words:

"Before, when I plowed, I was pulling three 14-inch bottoms, plowing from six to eight inches deep in black loam and muck, but in second gear. After the changeover to high compression, it plowed in third gear without any trouble and I did a third more plowing in the same time.

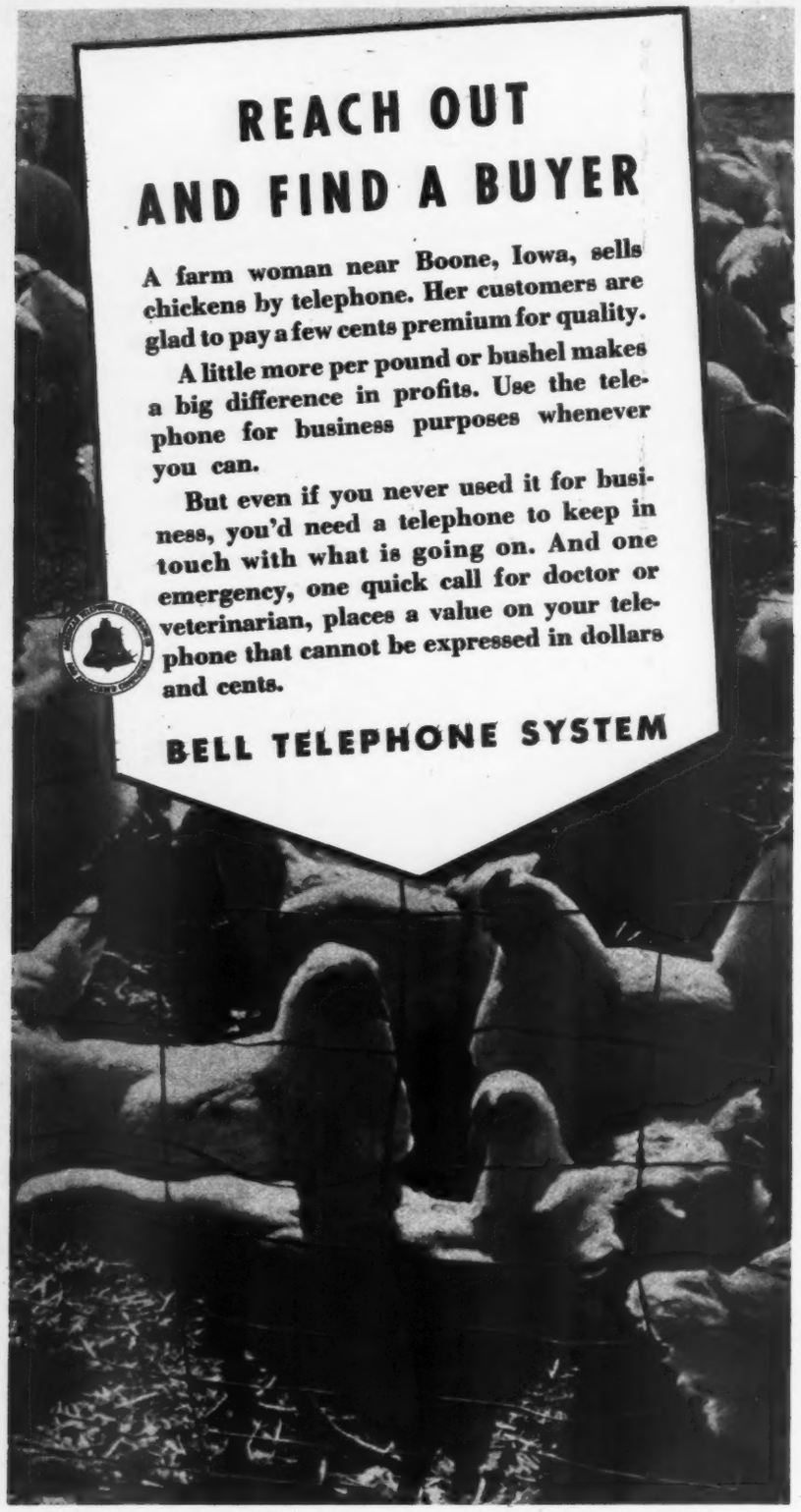
"I have harrowed 80 acres of planted corn with a 30-foot flexible harrow and disked 16 acres for corn with a 10-foot tandem disk in one afternoon, from one o'clock to about 7:30. We figure it takes about two hours to harrow 40 acres with our high compression tractor and the 30-foot flexible harrow.

"I have used regular-grade gasoline for the last seven years and I wouldn't use anything else in a tractor."

To get added power and faster working speed from your tractor, ask your dealer or write to your manufacturer today about getting "altitude" or high compression pistons or cylinder head to change it over to high compression. Easiest way of all, of course, is to make sure that the next tractor you buy has high compression pistons or cylinder head, which most manufacturers offer optionally today at no extra cost to you.

Ethyl Gasoline Corporation, Chrysler Building, New York, N. Y., manufacturers of anti-knock fluids for premium and regular-grade gasolines.

It pays to buy **GOOD GASOLINE**
FOR CARS, TRUCKS AND TRACTORS


REACH OUT
AND FIND A BUYER
A farm woman near Boone, Iowa, sells chickens by telephone. Her customers are glad to pay a few cents premium for quality.
A little more per pound or bushel makes a big difference in profits. Use the telephone for business purposes whenever you can.
But even if you never used it for business, you'd need a telephone to keep in touch with what is going on. And one emergency, one quick call for doctor or veterinarian, places a value on your telephone that cannot be expressed in dollars and cents.
BELL TELEPHONE SYSTEM

RE-EVALUATING THE DWARF FRUIT TREE

(Continued from page 7)

Or, it may be that by some strange coincidence a number of dissimilar isolated rootstock problems have rather suddenly arisen in different parts of the country, and which, taken together, constitute quite a proportion of interest. For example, to mention only a few problems, the apple growers of the Southeast have found root rots to be a serious handicap to their industry, so that they call for a rot resistant rootstock. The peach growers of the South, menaced by nematodes, ask for a nematode-resistant peach rootstock. The pear growers of the West demand not only a rootstock free from blight, but a body stock and scaffold branches free from blight as well. Similarly, the apple growers of the Plain States require both a hardy root and a hardy body stock, and Canadian fruit growers likewise. Pennsylvania desires a hardy mazzard rootstock for cherries. New York State seeks a hardy body stock for the cherry to avoid trunk splitting. Pear growers of Nova Scotia and New York would like a hardier quince root with which to dwarf the pear.

And, finally, and most clamorous of all is the call from Ohio, Pennsylvania, New York, Canada, and all the New England States for a slightly smaller apple tree than is now grown there, a problem to which the balance of this discussion may well be confined.

To be sure, the severe winter of 1933-34 took heavy toll of the 60 and 70-year-old Baldwin trees that flourished in parts of the Northeast, but now the McIntosh tree is found to be a large grower and that plantings of 50 by 50 feet are none too close. The morning's mail as this is written brings a characteristic letter from a western New York fruit grower which says, "I am becoming more and more interested in the production of apples on bush trees and will let the other fellow keep on with his three-story regulation tree. There is no money in high apple trees." The reasons for a desire for a smaller tree include earlier fruiting, easier and better spraying, easier and better pruning, easier and more efficient thinning, easier and more selective picking, and higher yields.

Dwarf trees, however, do not boast a very high reputation in America based upon past performance. Cold winters, drought, hot summers, and the general disposition of American orchardists to use extensive rather than intensive methods in fruit growing have all been unkind factors. Certain it is that excepting for isolated instances here and there about the country, dwarf apple trees have failed miserably. In tests conducted by the

(Continued on page 17)

Small-Fruit Culture

By James S. Shoemaker

Complete discussions of all phases of production and marketing of grapes, strawberries, bramble fruits, currants, gooseberries, blueberries, and cranberries feature this text and reference book. Written in an easily understandable style, the practical grower will find this volume both interesting and useful.

52 Illustrations 434 Pages

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Citrus Diseases and Their Control

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Authoritative information on citrus diseases occurring in all parts of the world is contained in this 582-page, illustrated volume. Serves as a guide to growers in the identification of diseases, diagnosis of their causes, and application of control measures. $5.00.

Book sent postpaid on receipt of price.

American Fruit Grower
1370 Ontario Street Cleveland, Ohio

STATE NEWS

(Continued from page 13)

000 bushels is under way and the two large graders in their packing house are turning out almost 2000 bushels of packed fruit daily. Taking advantage of the high quality, beautiful color, and finish of this mountain-grown fruit, a large share of their pack is being wrapped and packed in both northwestern and northeastern apple boxes.—A. N. PRATT, State Horticulturist, Nashville.

MINNESOTA—Coloring of apples was at least 10 days later than normal. Picking of Delicious in southeastern counties did not start until first week of October. For the first time in many years most varieties colored up as quickly in the vicinity of Twin Cities as they did in southern part of the State.

While good crops of apples were the rule, unusually high yields were conspicuous by their absence. In many instances crop was slightly undersize—particularly noticeable with Wealthy—probably result of drought and injury to root system during past two years.

Cortland did well again this year, although some growers have difficulty in getting good color and finish. Growers around La Crescent, including D. C. Webster, Henry W. Leidel, and Vollenweider Brothers, harvested a splendid, well-colored Delicious crop.—J. D. WINTER, Sec'y, St. Paul.

COMING MEETINGS

(Continued from page 4)

Dec. 6-8—Washington State Horticultural Association annual meetings, Chamber of Commerce Building, Wenatchee.—J. C. Snyder, Sec'y, Pullman.

Dec. 7-9—Virginia State Horticultural Society 42nd annual meeting, Charlottesville. Headquarters, Monticello Hotel; meetings in new Armory Bldg.—W. S. Campfield, Sec'y, Staunton.

Dec. 8-10—American Pomological Society annual convention in joint session with Missouri, Arkansas, Oklahoma, and Kansas state horticultural societies, Springfield, Mo. Program and exhibits in Shrine Mosque. Headquarters for APS, Hotel Kentwood Arms.—H. L. Lantz, Sec'y, APS, Ames, Iowa. W. R. Martin, Sec'y, Missouri Society, Columbia.

Dec. 8-10—Kansas State Horticultural Society annual business meeting morning of the 8th, Pittsburg, adjourning to meet with American Pomological and Missouri and other state horticultural societies, Springfield, Mo.—Geo. W. Kinkead, Sec'y, Topeka.

Dec. 8-10—Nebraska State Horticultural Society annual meetings, College of Agriculture, Lincoln.—E. H. Hoppert, Sec'y, Lincoln.

Dec. 15-17—Peninsula Horticultural Society annual meeting, Camden, Del.—T. F. Manns, Sec'y, Newark, Del.

Jan. 5-7—Illinois State Horticultural Society annual meeting, Centralia.—Joe B. Hale, Sec'y, Kell.

Jan. 5-7—Massachusetts Fruit Growers Association annual meeting, Municipal Auditorium, Worcester.—Wm. R. Cole, Sec'y, Amherst.

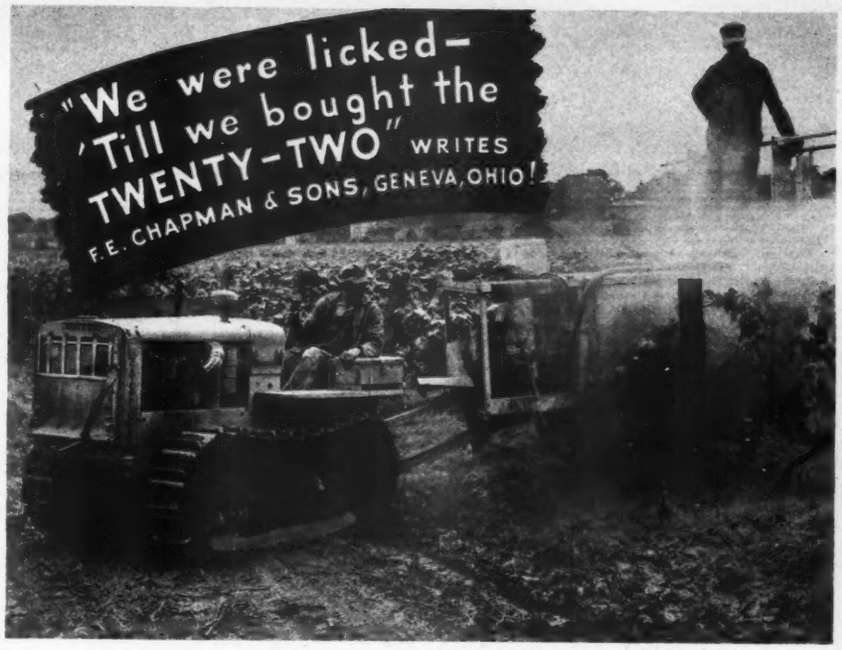
Jan. 11-13—Indiana Horticultural Society annual meeting, Purdue University, Lafayette, in connection with annual Agricultural Conference.—Harriet Rost, Acting Sec'y, Lafayette.

Jan. 11-14—New York State Horticultural Society annual meeting, Rochester.—Roy P. McPherson, Sec'y, LeRoy.

Jan. 18-19—Pennsylvania State Horticultural Association annual meeting, Harrisburg.—J. U. Ruef, Sec'y, State College.

Jan. 24-26—Ohio State Horticultural Society annual meeting first three days of Farmers' Week, Jan. 24-28, Ohio State University, Columbus.—F. H. Beach, Sec'y, Columbus.

Jan. 26-28—New York State Horticultural Society eastern meeting, Kingston.—Roy P. McPherson, Sec'y, LeRoy.



"EVERYTHING seemed to go against us this Spring," writes F. E. Chapman & Sons, Geneva, Ohio. "Cover crops grew waist-high. Excess rain, diseases, spiders, flies, and scab raided our orchards and vineyards. We thought we were licked.

"But we bought a 'Caterpillar' Twenty-Two Tractor, and got the best of these troubles. With a big weighted disk, this tractor turned under the cover crop in one trip.

"The Twenty-Two operated our 400-gallon power-take-off sprayer in hub-deep mud with full loads. Our spraying was done on time, and our orchards and vineyards never looked better.

"Our job this Spring had to be done at any cost — but on spraying, for example, the Twenty-Two used only 1¼ gallons of 9½c fuel per hour!"

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Gentlemen: I operate_____acres of orchard. Please send further facts on "Caterpillar" Orchard Tractors.

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*Town*_____ *County*_____ *State*_____

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Dept. A-117 Lancaster, Pa.

Where Nut Trees Grow

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FRUIT TREES

Peaches, Pears, Apples, Plums, etc. Excellent stock. Write for catalog. Box "A," The Storrs & Harrison Company, 83 years at Painesville, Ohio.

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Word of *Alorco* Cryolite, and its success, is indeed spreading. Growers are shifting to *Alorco* Cryolite because practical advantages are demonstrated where it has been used in 1936 and 1937 for control of codling moth, apple flea weevil, curculios and other chewing insects. The material is so finely divided that, as a dust or spray, it adheres better, effectively covers more surface, and is easier to remove. Actual orchard use indicates no fruit or foliage injury. Ask your dealer, or drop a line to our distributors for descriptive literature. ALUMINUM ORE CO. *Sales Agent:* ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pennsylvania.

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YORK SKIN CRACK

(Continued from page 11)

At first there is no discoloration except possibly a slight russeting (figure 1) but as the cracks become older they may turn almost black and as the underlying flesh tissues dry out the skin is pulled loose, giving a bleached appearance (figure 2) that might be confused with hydrochloric acid injury (figure 4). In "York skin crack," however, areas affected in this way usually have a grayish cast instead of the pale or pallid yellow color which characterizes the acid burning. Moreover, the late stages of York skin crack are more likely to be accompanied by wilting (figure 3) than is hydrochloric acid injury and are also to be found very numerously on certain sections of the apple rather than scattered indiscriminately over its surface. Acid burning is often most severe around the calyx and in the stem basin, but the bleached stage of York skin crack has been observed only on the cheek of the apple.

Since individual trees are more or less generally affected, it would appear to be desirable to segregate the fruit from these trees in the orchard. Apples affected with York skin crack are more advanced in maturity than normal fruit and should be packed and handled separately on this account as well as because it is practically impossible to effectively sort out affected apples if they are mixed with the general crop. The cracked skin of these apples renders them subject to decay much the same as any mechanical injury which ruptures the skin.

2. Hydrochloric acid injury (figure 4) occurs on apples that are allowed to remain in the acid washing solution too long or which are ineffectively rinsed after washing in hydrochloric acid for removal of spray residues. At first affected areas are watersoaked in appearance but later are characterized by bleached, pallid or pale yellowish depressed spots usually in the calyx region, in the stem basin, or surrounding lenticels through which the chemical penetrates. The skin is often slightly torn or cracked in the center of the affected areas due to the corrosive action of the acid, and the spots are more sunken than in the case of York skin crack.

In hydrochloric acid burning there is likewise no regularity of distribution of the injury or general uniformity of outline of the affected areas. The injury can be detected within a few hours after the washing treatment and is clearly apparent within 24 hours.

3. "Heat cracking" (figure 5) is likewise produced in washing treatments for removal of spray residues. It occurs when a cold turgid apple is subjected to too long exposure in heated washing solutions. For most varieties of apples 45 seconds' exposure to a temperature of 110 degrees F is as much as they will stand without resulting heat cracking.

The York Imperial appears to be especially subject to this injury, and should be handled accordingly, either by reducing the temperature of the washing solution or shortening the exposure.

Heat cracking is characterized by the formation of numerous fine cracks arranged latitudinally around the apple. The region around the calyx is especially susceptible and is the first place to look for this type of injury, although it may extend beyond to the cheek of the apple. The cracks appear as fine white lines, clearly visible to the naked eye, within 24 hours after treatment, although experienced observers can detect the injury almost immediately after it occurs. As the tissues begin to dry out the cracks widen until they assume the general outlines of advanced stages of York skin crack. However, in heat cracking the regularity of location and form is more characteristic and pronounced, than in the other two types.

Like the other forms of skin cracking which expose the underlying flesh tissues, the affected apples are subject to early wilting and decay.

A new product known as Orange Nectar has recently been introduced at Southgate, Calif. This new product is a syrup made from orange juice and sugar, and may be used for pancakes or waffles, in the baking of ham, candying of sweet potatoes, sauce making, or for icings and frostings.

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RE-EVALUATING THE DWARF FRUIT TREE

(Continued from page 14)

New York State Agricultural Experiment Station a number of years ago with so-called Paradise and Doucin rootstocks, the shallow-rooting of the trees, the tendency to blow over and break off, and the general non-adaptability to climatic conditions led to a report condemning dwarf trees for commercial orcharding.

In addition, there is no good dwarfing stock for the peach. Mahaleb, although the best, is far from the answer to dwarfing both the sweet and the sour cherry. *Prunus Besseyi* has possibilities for the plum, but is far from perfect. The quince dwarfs the pear sufficiently, but is tender to winter cold.

With this rather sorry outlook, is there anything to justify a more optimistic tone? Happily there is, and it consists in a series of new "old" dwarfing rootstocks for the apple, of Old World origin, which are now receiving attention in this country. They are "new" in the sense that some have never been given a trial in America. They are "old" in the sense that some of them are nearly a hundred years old and have been known in European fruit circles for generations.

Credit for a revival of interest in these dwarfing stocks must be given to Dr. R. G. Hatton and his associates at the East Malling Research Station in England. He observed that the dwarfing stocks were badly mixed and that there were several types of plants masquerading under the name of "Doucin" and of "Paradise." These he separated into pure lines or clons. It is something as though all apple varieties had been jumbled together into the two classes "red apples" and "green apples," and then as though somebody had come along and separated the red apples and the green apples into varieties, separating out the McIntosh as McIntosh, the Northern Spy as Northern Spy, the Rhode Island Greening as Rhode Island Greening, and so on. It sounds like a very simple and obvious sort of thing, but like many other important steps, its very simplicity may have been why it was overlooked for so long.

At all events, from various sources Dr. Hatton selected out 16 types of rootstocks for the apple, propagated them, and worked various varieties of apples upon them. These rootstocks he numbered, the designation "Malling" usually being placed with the number to further identify them, as "Malling IX." Most interestingly, the performance of varieties on these stocks varied appreciably. Some rootstocks were extremely dwarfing, some were slightly less dwarfing, some were still less dwarfing, and some were not dwarfing at all. In a general way he grouped these stocks into (A) very dwarfing, (B) semi-dwarfing, (C) vigorous, and (D) very vigorous.

In the very dwarfing class is to be found the "Paradise" (Malling VIII and IX) of American usage, while in the semi-dwarfing class is the "Doucin" (mixed Malling II), used in America. The others are new to this country. In other words, of the 17 rootstocks now available only two or three have been given a real trial in America. And of these, Malling VIII and IX (Jaunne de Metz) are the most dwarfing apple rootstocks available and entirely unsuited to present-day extensive orchard operations, while the other, mixed Malling II (Doucin), has possibilities under the right conditions but is too exacting for general extensive "rough and tumble" cultural methods. To condemn all dwarfing rootstocks on the basis of the performance of these two, therefore, is scarcely fair. And, if a still less degree of dwarfing is desired, neither of these two will provide it.

It is to some of the other rootstocks on the list that attention is now being given. How will Malling I and IV classed as vigorous in England, behave in America? Will Malling XII, XIII, XVI or some other, produce the slightly dwarfed tree that northeastern orchardists would like?

Following is a list of these rootstocks with a few notes as to their principal characteristics:

A—Very dwarfing
- IX—Jaunne de Metz
- VIII—French Paradise

B—Semi-dwarfing
- II—Doucin, often called "English Paradise" (may eventually be shifted to Class C).
- III—A rogue of II
- V—Doucin Ameliore, also called "Improved Doucin"

C—Vigorous
- I—Broad-leaved English Paradise (of Rivers)
- IV—Holstein Doucin, also called Dutch Doucin (may eventually be shifted to Class B)
- VI—Nonsuch Paradise (of Rivers), also called Rivers' Paradise
- VII—(May eventually be shifted to Class B)
- X—
- XI—

D—Very vigorous
- XII—
- XIII—
- XIV—
- XV—
- XVI—

Preliminary trials hold some promise. To be sure Malling IX produces just as dwarf and just as fragile a tree as the Paradise roots used in trials a generation ago, and would be

(Continued on page 18)

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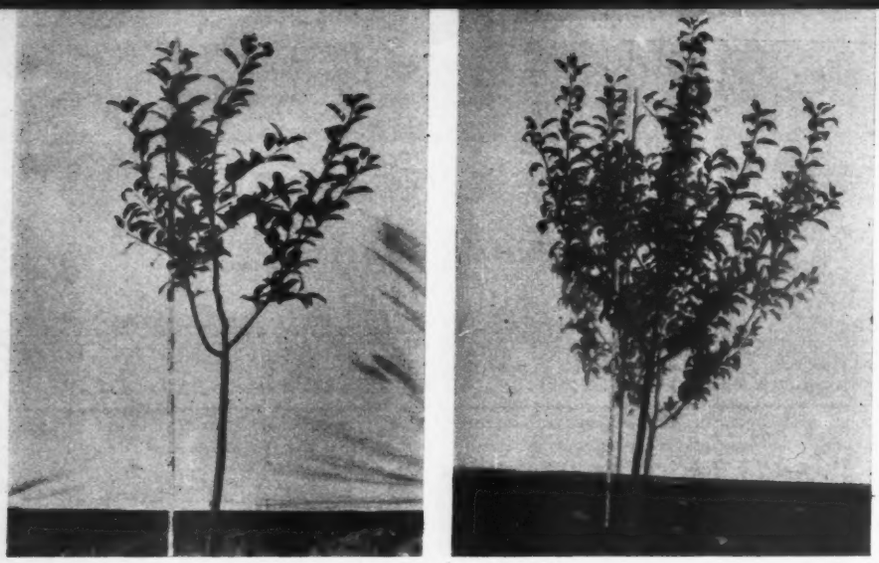

Photographs show trees planted in adjacent rows at the same time. Tree at left was planted in the usual manner while the other was planted with a mixture of soil and 12 quarts of granulated, dampened peat moss.

PEAT MOSS AIDS POST-PLANTING GROWTH

By JONAS HOWARD

"IF the soil is coarse and lumpy and trees are set loosely," say New York Agricultural Experiment Station specialists, "air pockets will be found around the roots, preventing intimate contact with the soil and water intake."

Long known is the fact that air pockets are a curse to successful planting of fruit trees, for water must be had in sufficient quantities by roots of newly set trees if growth is to result in satisfactory amounts. At best, the shock of transplanting is enough to set a tree back, without added detriment of water shortage.

But, you ask, what about aeration when ground is packed so tightly about the roots? Aeration, it's true, is an important process for aid to young trees. To work out methods of creating a situation as close as possible to the ideal, these same New York workers have evolved a planting plan whereby the soil is compacted about tree roots, yet aeration is maintained and water is retained to supply the roots of newly-set trees.

First goal, they say, is to have the roots in intimate contact with the soil and to have them supplied with adequate and constant moisture. Results of preliminary tests at the New York station show that peat moss, when applied with soil to tree roots at planting time, will go a long way toward attaining the above goal.

Peat moss contains no element that might be injurious to young roots. Water-holding capacity of soil is increased greatly by the addition of peat moss. Even on sandy soil the peat moss not only conserves moisture but acts as a binding agent as well. Other beneficial properties claimed for peat moss are that it keeps the soil loose and friable, allows for aeration, and acts as a buffer-mulch, preventing root injury from summer heat or low winter temperatures.

Peat moss-planted trees at the New York station showed nearly seven feet of shoot growth in one season.

Application of the moss at planting time is comparatively easy. A standard pail is filled with broken-up and dampened moss. This is sprinkled about the roots of the trees as soil is shoveled into the hole. Such procedure provides a satisfactory moss-soil mixture.

PEARS •

(Continued from page 8)

natural culinary appeal of fresh pears.

CULTURE

It is well known that pears thrive under a soil management system of clean cultivation and cover crops. But the appearance of unusual amounts of fire blight in recent seasons has brought about a trend toward keeping the pear orchard in sod. Growth is often too succulent and vigorous under cultivation. The fire blight organism prefers such growth on which to develop most abundantly.

Where there is little danger from serious attacks of fire blight, the added bearing surface and resulting larger crops obtained with cultivation and covers will make up for the extra work involved.

Best results are obtained with pear orchards in sod when applications of quickly-available nitrogenous fertilizers are made about a month before growth starts.

RE-EVALUATING THE DWARF FRUIT TREE

(Continued from page 17)

just as severely condemned now as then, excepting for the amateur gardener or the man who desires a very small tree. Likewise, Malling II offers a type tree similar to Doucin but more uniform and more vigorous.

But now come the newer stocks. Malling IV and VII are classed as vigorous stocks, yet performance records show that they are close to semi-dwarfs, and may be the ideal semi-dwarfing stocks of the future. Malling I, too, is called a vigorous rootstock, but it produces a somewhat dwarfed tree in the orchard.

As for the very vigorous types, namely, Malling XII, XIII, XIV, XV, and XVI, most attention focuses at present around XII, XIII, and XVI. And these, too, show different degrees of vigor. Malling XVI, for example, in early tests produces a very large, vigorous tree. Malling XIII produces a slightly smaller tree and Malling XII one still smaller. As the trees come into bearing, there is some indication that trees on Malling XII may go ahead of Malling XIII. The important point, however, is that here are rootstocks with many different degrees of dwarfing, which is exactly what fruit growers are interested in.

The problem now is to adequately test these stocks in as many different places as possible with as many different varieties as possible, and as quickly as possible. Trial seems the only sure way because one variety may make a very much smaller tree than another—both on the same rootstock. For this reason, too, there is no great hurry about venturing with dwarf trees. It will be time enough when the performance of a variety on a given rootstock has been proved.

Yet it is encouraging to know that there is some hope for finding the answer to the slightly smaller tree desired by fruit growers and it is worth while to keep in touch with the possibilities as they are slowly revealed by each succeeding year of trial.

A summary of fruit varieties, seedling trees which are useful in checking soil erosion, and ornamental trees that are recommended for nine western states—Nebraska, Wyoming, Montana, Kansas, South Dakota, New Mexico, Arizona, Utah and Colorado—has been prepared by A. M. Binkley, professor of horticulture at Colorado State College.

Among the fruit varieties included in the summary are apples, crabapples, pears, cherries, peaches, strawberries, blackberries, plums, raspberries, currants, and gooseberries.

Copies of the summary may be obtained upon request to Prof. Binkley at the college in Fort Collins.

CULLS ARE "SCREENINGS" OF THE APPLE DEAL

By C. C. TAYLOR
President, Michigan Apple Institute

LAST year the grapefruit industry marketed successfully, and at some profit, a crop that proportionately was perhaps as large as the 1937 apple crop is reported to be. Co-operation and help of food dealers, independent and chain, was asked for and was given in last year's grapefruit deal. Food dealers kept grapefruit in the forefront all during the winter. Food salesmen pushed grapefruit and sold grapefruit.

Now, the Michigan Apple Institute along with institutes in all other apple growing sections of the country, have asked for and have been promised the same help and co-operation from independent and chain food dealers this year for apples. Officials of the national organizations of chain and independent grocers tell us that they can and will sell this big 1937 apple crop. They speak with confidence because they have frequently put on successful sales drives on such items as citrus fruit, lamb, walnuts, etc. They say they can put apples over too. But—

In these other drives food dealers have not had to contend with cheap grapefruit, cheap cuts of meat, cheap walnuts, etc., bought by peddlers from the producer and sold door to door to retail store customers. I wonder how much grapefruit the stores would have sold last year at, say, five pounds for 25 cents if the peddlers had been selling cull grapefruit at, say, 10 pounds for 25 cents; or how much lamb at 35 cents per pound, with peddlers offering lamb at 20 cents per pound. Think it over!

In short, there is a factor in this apple deal that does not exist in other foodstore drives of this type. It is the factor of cull apples—grades below U.S. Utility. Are growers going to show ordinary good business judgment and protect their own higher grades by holding back or dumping their low grades? If commercial growers don't do so, the farmer-grower with a few hundred bushels certainly won't, as he likely has few high-grade apples to protect.

The Pacific Northwest does not ship its culls into its higher grade markets. Freight is prohibitive and, besides, Northwest shippers are too smart. They have too much money invested in their higher grades. So do Michigan growers. But we have been selling culls every year nevertheless. We seem to think that if the other fellow dumps his low grades we can sell ours and gain a few paltry dollars. Every time we do it in big crop years like this we help just that much to depress prices on our own main crop—the good grades.

One grower has suggested that if foodstores would purchase only U.S. No. 1 apples they would be furnishing constructive help this year. That is true. But—how about the grower? Is he willing, in turn, to keep his low grades off the fresh fruit market so dealers can find customers for U.S. No. 1 apples. The answer seems to be strictly up to the grower. If he plays fair, very likely the food stores will, too.

Apple institutes in all the apple growing sections are greatly concerned over this question. They feel that if grades below U.S. Utility are not withheld from the market, there is no hope for profitable prices on the main crop of higher grades this year. Involved in this also are canning and pie grades. If they sell too cheaply they depress the higher grades.

Apple growers have only themselves to blame for the "cull" problem. They can solve it any time they want to do so. So long as culls are put on the fresh-fruit markets, peddlers and some types of dealers and consumers will buy them.

In our section we have had a splendid example this summer of handling the cull portion of the crop. Rust hit the wheat hard here, with heavy shrinkage of the kernel. When the wheat was sold, did the grain buyer sell both the plump kernels and the screenings for bread? Of course not. The screenings went back to the farm for stock feed.

Is the grain trade any smarter than the apple trade? I don't think so; but the apple trade is slower to realize that culls are the "screenings" of the apple deal.

The U.S.D.A. reports a bumper crop of walnuts, the largest crop of almonds since 1926, and a pecan crop above average. Pecans, according to the Bureau of Home Economics of the U.S.D.A., contain more than 70 per cent fat; English walnuts, hickories, filberts, butternuts and Brazil nuts, more than 60 per cent, while almonds, beechnuts, black walnuts, and pistachios are more than half fat.

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Of AMERICAN FRUIT GROWER, published monthly at Cleveland, Ohio, for October, 1937.

STATE OF OHIO } ss.
COUNTY OF CUYAHOGA }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared E. G. K. Meister, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the AMERICAN FRUIT GROWER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, American Fruit Grower Publishing Company, 1370 Ontario St., Cleveland, Ohio; Editor, J. H. Gourley, 1370 Ontario St., Cleveland, Ohio; Managing Editor, Dean Halliday, 1370 Ontario St., Cleveland, Ohio; Business Manager, E. G. K. Meister, 1370 Ontario St., Cleveland, Ohio.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

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3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is

(This information is required from daily publications only.)

E. G. K. MEISTER,
Business Manager.

Sworn to and subscribed before me this 4th day of October, 1937.
(Seal) Myron W. Ulrich, Notary Public
(My commission expires December 31, 1939.)

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200 GALLON ORCHARD SPRAYER. SMALL ELECtric grader and polisher. JOE RHEA, Attalla, Alabama.

SMALL GAME HUNTING

(Continued from page 9)

same mixture of strychnine and baking soda and sift over a quart of rolled oats. Then warm the poisoned oats in an oven and sprinkle over them six tablespoonfuls of a mixture of three parts of melted beef fat and one part of melted paraffin, mixing until the oats are evenly coated. As soon as the grain cools it is ready for use.

Prepared strychnine-whole-oats-bait can be obtained at cost from the Regional Director, Biological Survey, Washington, D.C. The Biological Survey representatives in some states also have this bait for sale, usually through state horticultural societies.

Bait is placed in the burrows of pine mice and in bait stations made of wood, glass, tile, roofing paper, or tin where meadow mice feed. It is suggested that the oats bait be used in the fall, followed by the vegetable poison. Should it be necessary to supply bait during the winter, the oats mixture can be placed in bait stations and will be available for several weeks.

Just as population reduction has been recommended for mice, rabbits and other larger rodents can be best controlled by reducing the number which infest orchards. Most successful means of rabbit-thinning is by trapping. Also, there is opportunity for profitable sale of pelts after they have been properly treated. Wire mesh guards and other measures have proved effective when they are of sufficient height to protect trees if the rabbits feed in a standing position or on snow packed about the trees.

Tree injury is also curtailed through use of repellents when the trees are constantly protected with these preparations. Several commercial repellents are now on the market. A good repellent is concentrated lime-sulphur solution. Addition of a pound of glue to each gallon of the solution will increase its adhesiveness.

Since rodents may range over large areas, it may be desirable to extend trapping and baiting operations to tracts adjacent to the orchards.

Care must be taken to keep children and domestic animals away from poisoned baits. Also, containers should be marked POISON.

NORTHERN NUT GROWERS MEET

THE 28th annual meeting of the Northern Nut Growers' Association was held in Washington, D.C., and College Park, Md., September 12-15, 1937. A full program arranged by C. A. Reed of the U.S.D.A., brought to light much information on nut culture, including reports on experimental work by official research workers and private growers. About 80 were in attendance from 11 states, the District of Columbia, and Ontario.

Since the papers presented will be reviewed from time to time in this column, this report will deal chiefly with the field trip of September 15.

At the Beltsville Station of the U.S.D.A., Dr. H. L. Crane, in charge of nut investigations, explained the projects under way. Various methods of budding were being tried. A new wrap for buds known as Parafilm-G was especially successful.

Another item of interest was the successful use of a mulch of three inches of sawdust in a nursery planting. This worked out very satisfactorily in keeping down weeds and promoting growth. Along with the mulch it was necessary to use a nitrogenous fertilizer, such as nitrate of soda or ammonium sulphate, at the rate of 300 to 500 pounds per acre.

A 10-acre planting of filbert varieties and seedlings under the direction of C. A. Reed was showing evidence of mineral element deficiency and experiments were under way to determine the treatment that would promote more favorable growth.

An 18-acre variety collection of nut trees was next visited. In this orchard more than 1,000 chestnut trees, mostly hybrids of the Chinese chestnut, had been set out with a loss of only three trees, this success being attributed largely to cutting back the trees heavily at the time of planting.

At the Bell Experiment Station Dr. Gravatt, in charge of the chestnut work, exhibited the famous Van Fleet hybrid chestnuts which are now about 25 years old. Some of these trees at one time or another have become infected with blight, but have not been injured sufficiently to prevent regular fruiting. These trees are mostly hybrids with the Chinese chestnut, and some produce large attractive nuts of good flavor. Selections S-8 and C-1 were considered to be among the best. Dr. Gravatt explained that chestnut trees must be fertilized heavily to make good growth and resist blight infection. Good vigor is also conducive to greater hardiness. The Chinese chestnut is considered the most promising nut tree to take the place of the American chestnut.

At the farm of T. P. Littlepage at Bowie, Md., were seen 30 acres of northern pecan varieties which were producing a heavy crop. A row of Stabler black walnuts half a mile long had been fruiting a number of years, but was not considered very satisfactory because of light bearing and variability of size from year to year.

The 1938 meeting of the association will be held in Boston, Mass., September 12 and 13.

Officers elected for the ensuing year are: President, J. Ford Wilkinson, Rockport, Ind.; vice-president, Dr. A. S. Colby, University of Illinois, Urbana, Ill.; treasurer, Carl F. Walker, Cleveland, Ohio; secretary, George L. Slate, New York Experiment Station, Geneva, N.Y.—GEORGE L. SLATE.

NEW USES FOR PECANS

The Florida Experiment station has found, according to G. H. Blackmon, horticulturist, two new pecan derivitive products, pecan oil and pecan butter.

Pecan oil is prepared by extracting the oil from the nut. By subjecting the nut kernels, cold and unground, to 12 tons of pressure, the oil extracted ranges from 25 to 36 per cent of the kernel weight, varying with different varieties of nuts. The oil thus expressed from the kernel is clear, of a beautiful golden color, and offers innumerable possibilities as a cooking and salad oil and for other uses.

A delicious butter was made from the pomace that remained after the liquid had been pressed from the pecan kernels.—OSCAR KEELING MOORE.

NEW

- GRAFTING TAPE
- LONG-SHAFT PRUNER
- POST TREATMENT

By HANDY ANDY

Harvest days have come and gone. One must now look to winter's important routine in preparation for the advent of another spring. There is the remainder of the crop to move, then plans for pruning and grafting. Every snap of the pruning shears is important, particularly if, later on, you are planning a program of budding and grafting. Mild winter days also make possible the undertaking of post and trellis repairs so vital to small-fruit plantings. If you have practical ideas on these subjects, send them to AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland, Ohio.

GRAFTING TAPE •

Whether budding or making small grafts a reliable tape is necessary. The tape must hold the connected parts securely so a good union will result. It must also act as a protection against insects and diseases as well as the weather.

Shown here is a new tape that looks like it will "fill the bill." Don't misunderstand me. I don't mean that a good tape is all that is needed when performing these operations, because there are too many pitfalls that might occur. But a good tape will go a long way towards a successful grafted or budded union.

This tape seals tightly without binding the graft, providing a firm

and even pressure over the grafted area. Yet it expands enough to allow growth without girdling. The tape is sticky enough to cover the surface and stay put. Moisture is needed by connected growing parts, and since this tape is moistureproof, it cuts down on escape of moisture from the union.

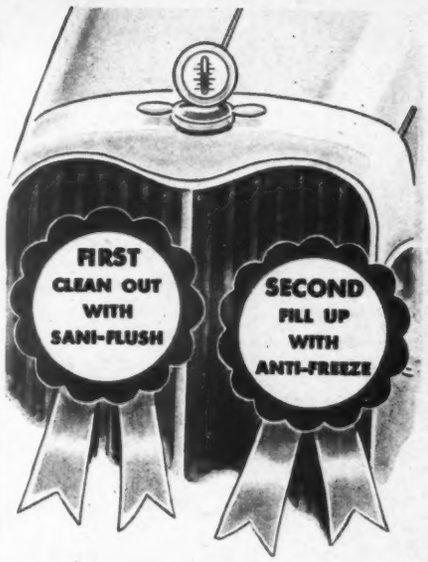
LONG-SHAFT PRUNER •

No more "bends" when pruning berries because there has recently appeared on the market pruning shears with a much-needed long shaft. They come in two lengths, four and six-foot. Lower branches of trees can also be trimmed with this new tool.

The shaft is of aluminum, making the pruner light in weight. Its shear mechanism is operated by a handle at the base of the shaft. The patented action of the shears allows for easy cutting of three-quarter-inch branches.

POST TREATMENT •

Small-fruit growers will be interested in advice received from Washington State College regarding the installation of posts in concrete. Specialists at the college suggest that posts, when set in concrete, should be covered first with a coating of warm creosote or crank-case oil. They also state that it might help to use some 30-inch lengths of barb-wire bent in a circle as reinforcements of the concrete base. However, a good quality of concrete cured probably for at least two weeks, is not easily cracked by swelling of the posts. Posts would probably exert some pressure, but the wood is sure to crush before the concrete breaks.



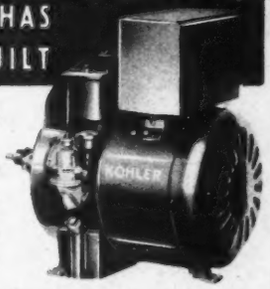
A WINNER FOR WINTER

DON'T waste anti-freeze by putting it in a dirty radiator. It heats up needlessly and boils away rapidly. Spend ten cents and very few minutes to clean the radiator thoroughly with Sani-Flush.

Just pour a little of this powder in the radiator. (Follow directions on the can.) Run the motor. Drain, flush and refill with clean water. That's all there is to it. Dangerous lime deposits are purged away. Rust and scale are banished. The delicate veins of the radiator flow freely. Sani-Flush cannot injure aluminum cylinder heads or motor fittings. Look for Sani-Flush in most bathrooms for cleaning toilets. Sold by grocery, drug, hardware, and five-and-ten-cent stores —25 and 10 cent sizes. The Hygienic Products Company, Canton, Ohio.

Sani-Flush Safe NOT CAUSTIC
KEEPS RADIATORS CLEAN

LOWEST COST ELECTRIC PLANT KOHLER HAS EVER BUILT



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SUCCESSFUL ORCHARDS

● A "ROUND TABLE" PAGE FOR EVERY GROWER ●

This page is a place for growers to get together and exchange experiences and ideas. The beginner, as well as the veteran, will find here many practical suggestions for better and more profitable fruit growing. In return for the helps you receive from this page, be ready to pass on, for the benefit of others, any new idea, method or procedure you have developed or run across. Just jot it down as it occurs to you (a postcard will often do) and mail it to the "ROUND TABLE EDITOR," AMERICAN FRUIT GROWER. Don't worry about fancy writing. What the readers of this page want are practical pointers—that are to the point.

MORAL: SPRAYING PRODUCES FRUIT

"UNUSUAL" is the word for the following quotation from E. R. Gorton, Missouri orchardist. But it just carries out the thought so often expressed about the "Round Table."

"Spraying ruins trees. At least the writer almost believes that it does. Three years ago I had a small grove of plums which was on the place when I started taking care of it. After cutting out some, pruning and cleaning up in general, the plums were sprayed for the first time that year, and for the first time in the life of the trees—so the neighbors said—a crop of fruit was ripened. That was encouraging, so I sprayed them again the next year, and the trouble began.

"Due to the spraying the trees received the second year, scarcely a plum fell off, and the fruit set so thickly that every branch had to be braced to keep them from breaking under the load. As a matter of fact, the crop of plums alone on those trees just about paid the cost of spraying the plums and all the rest of the orchard, including apples, peaches, and pears, as well.

"From this experience I've concluded that unless you want to grow enough fruit to require bracing, don't spray."

STABILIZING APPLE YIELD

THE problem of alternate bearing (a heavy crop one year followed by a light one the next) no longer worries Henry Troubant, Orange County, Indiana, apple grower. Mr. Troubant has worked out a system of orchard management that resulted in nine consecutive years of bearing before the balance was upset. When it was upset in 1932 by a crop failure, Mr. Troubant set about to prevent a heavy crop the next year, which would have started a cycle of alternate bearing.

The first step after the crop was killed was a heavy application of nitrogen fertilizer early in the spring. That stimulated the trees to rapid growth and resulted in the formation of vegetative buds rather than fruit buds. Reduction in the number of fruit buds held the next crop to normal.

Otherwise the first crop after failure would have been extremely heavy and a light crop the second year would have been inevitable.

"I use a nitrogenous fertilizer," says Mr. Troubant, "that is made by combining nitrogen from the air with lime. I prefer it because it can be applied six weeks before the trees bloom, or even in the fall, without loss. I have used sulphate of ammonia and nitrate of soda, but these should not be applied earlier than two to three weeks before the trees bloom or some of their value will be lost by leaching.

"Another thing we do to insure steady production is to spray regularly to keep the leaves healthy and free of fungous diseases. The greater part of a tree's food supply is taken out of the air by the leaves. If they do not function properly the tree will not store food and production will be thrown out of balance.

"Only light pruning is practical. Overpruning may delay the bearing of a young orchard and it may throw a mature orchard out of production. That would bring back the cycle of alternate bearing.

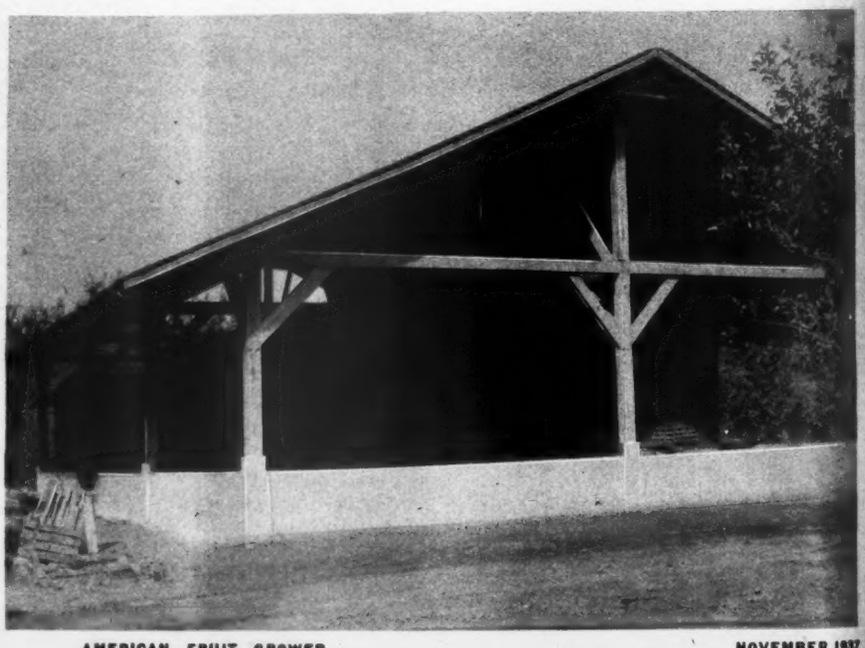
"Unless care is taken in this section, an orchard will become covered with a tight bluegrass sod, which acts as a thatched roof in helping water on rolling land to run away. We use limited cultivation—disking when the sod is not too tough, plowing if it is. For young orchards, especially, I like clean cultivation for the spring and early summer, and a cover crop for fall and winter. The best cover crop we have found is dwarf biennial sweet clover. On 25 acres of eight-year-old apples we have this clover going into its third year. It has reseeded itself regularly since it was established. If blue grass chokes it out we shall establish another seedbed and start the clover artificially.

"The first step toward steady bearing is to get away from the abnormally heavy crop, which is inevitably followed by a short crop. A short crop will in turn induce another large crop. When production is finally brought down to normal, the practices we follow will permit continuous bearing until there is interference by nature to cause a short crop or a failure."

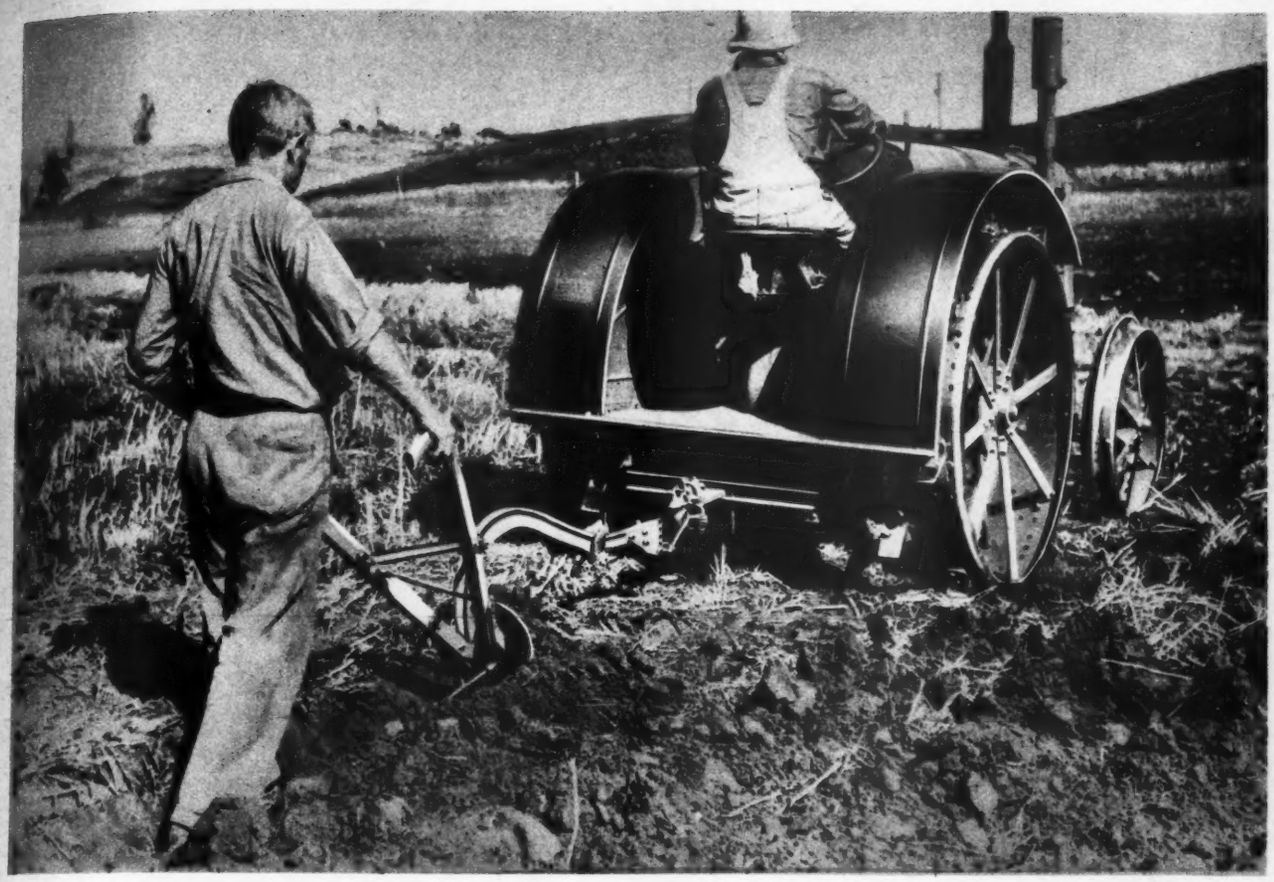
GRIMES RIPENED IN ORCHARD SHED

IF you've ever been bothered with the odor of ripening Grimes in your storage, you'll be interested in the statement of Marion Lazelle of the Brown Fruit Farm in Ohio.

"To get away from the odor of Grimes Golden apples in the storage, we built an orchard storage building. Fruit is placed in the building as soon as picked, piled just as it would be if put in the regular storage. There are no sides on the building and the free movement of air through the crates prevents any spoilage during the comparatively short period they are held there. If not sold we move them into the storage when the temperature goes down."



The Grimes orchard storage described at right by Mr. Lazelle.



Does this make sense ?

WHEAT soared this year to almost nine hundred million bushels — and right behind the threshing crews came the railroads, equipped and ready to complete the marketing job.

In a single week, the railroads moved more wheat than in any week in history.

Now, such a record doesn't "just happen." It was possible because the American railroads have been on the job, all during hard times, stepping up their service to meet the farmer's needs by fifteen years of steady improvement.

Great new locomotives have been developed — twice as able as the engines of the days just after the war.

Curves have been straightened — grades reduced — stronger bridges built — thousands of miles of heavier rails laid to make safe speed possible.

That's why the golden harvest rolled to market in record time!

Now then — what does all this have to do with the picture at the top of the page?

Simply this: There's a bill waiting action by Congress — it has already passed the Senate — proposing to cut down the length of trains. This bill would, in effect, force railroads to use fine modern equipment to pull short trains just as if you were to be forced to use a big, powerful modern tractor to pull a single plow.

What such a bill means — to the farmer — is railroad service forced back to the level of years ago, and you may remember that there was a time when every big crop meant "car shortage" with heavy loss to everybody.

There is no sound reason for this bill to become law. So far as safety is concerned — the railroads have reduced accidents to employes by three-fourths during the very years that modern long trains were being developed to give faster service.

And the increased cost of transportation — if this bill is passed — will amount to more than one hundred million dollars a year.

You have much to lose — nothing to gain — if this bill becomes law. In your own interest, you will want to talk to your friends and neighbors — let your opinions be known — before this bill comes up for a vote.

ASSOCIATION OF
AMERICAN RAILROADS
WASHINGTON, D. C.

THE *Answer to Aphis Control*

DOWSPRAY DORMANT

A SUPERIOR SPRAY MATERIAL

What will next season bring? Will it be a "light" year with little trouble with aphis or will a heavy infestation sweep through orchard after orchard—shriveling foliage and stunting fruit?

No one knows! And, the orchardist out to make full profit can't afford to take chances.

For aphis can not only cut down a current year's crop by as much as 50% but also may reduce fruit production for several years.

Fortunately, this yearly menace of rosy apple aphis can now be ruled out. Among the new developments of orchard operation is the perfection of Dowspray Dormant*—the superior dormant spray.

Dowspray Dormant, properly applied, gives *complete protection* against rosy apple aphis. Moreover, it has also demonstrated marked value in controlling early summer infestation, green apple aphis, San José and scurfy scale and is equal, if not superior to ordinary petroleum sprays, in fighting European Red Mite.

And, Dowspray Dormant offers many distinct features over and above its high effectiveness.

It is non-irritating to workers and non-injurious to spray equipment—a big feature many orchardists have wanted!

It is non-freezing because it contains no water—every penny of your money buys *effective* spray material when you use Dowspray Dormant.

It is stable and flowable under all conditions—no waste—quick and easy to prepare and apply due to a special emulsifier supplied with every quantity of Dowspray Dormant.

Last year thousands of trees were protected with Dowspray Dormant. Every orchardist who used this superior spray material as recommended discovered the end to all worry and loss from aphis infestation. It paid big dividends.

Now is none too soon for you to plan your spray program against aphis and other destructive pests. You can count the battle already won if you make the simple, but vital, decision to spray with Dowspray Dormant this coming spring. Ask your dealer what the experience of his customers has been.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

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